Uploading the city of Ottawa's 311 complaints data to Google Fusion Table

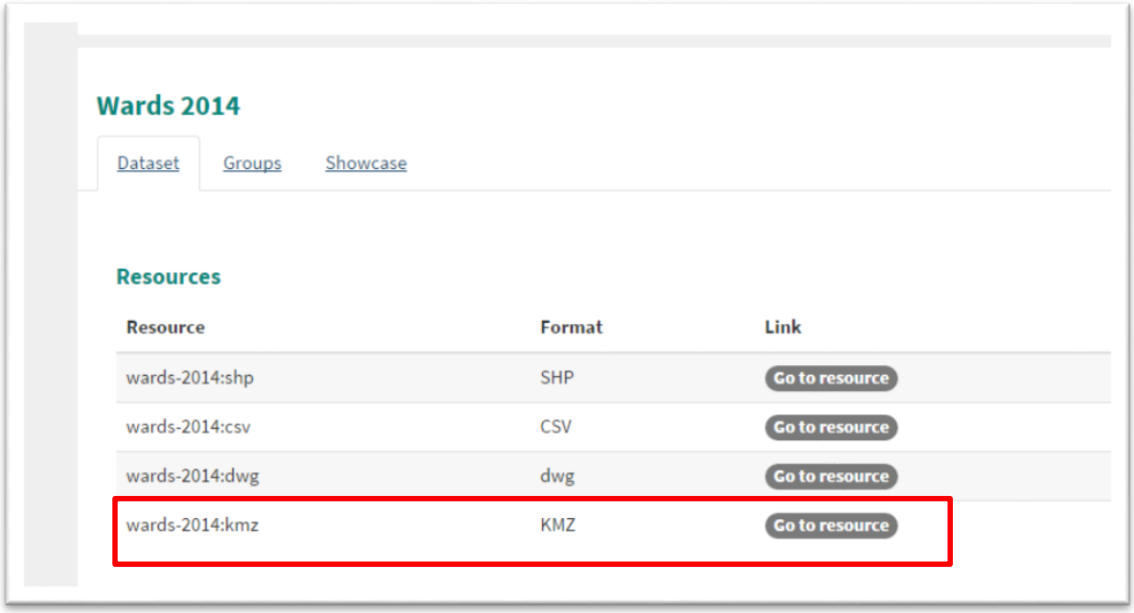
ArcGIS online is fine for mapping datasets with geographic coordinates. However, it's not so nimble when it comes to uploading csv files and physically joining them to a shape file such as the city of Ottawa's 2014 ward boundaries.

To perform this task, we will turn to Google Fusion Tables. If you don't have it, then go to your Google Drive, click the "New" tab, and choose the "Connect more apps" tab, plug the term "Fusion Table" into the search bar, and download the Fusion Tables app, which will be labelled "experimental" because it seems to be in perpetual beta format.

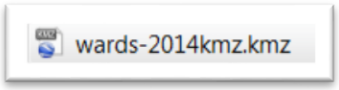
So let's get started, using noise bylaw complaints from 2013 to the first nine months of 2015.

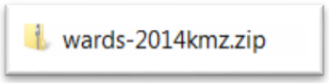
1. Make sure you have the csv file that we exported from MySQL using the query that groups the complaints by ward, and uses the "WHERE" statement to filter the results for '%noise%'. If you don't have it, please click here.
2. Fusion Tables do not read shape files. Instead, they use a KML format, which stands for Keyhole Markup Language.

3. So let's go to the city of Ottawa's open-data site to find the file.

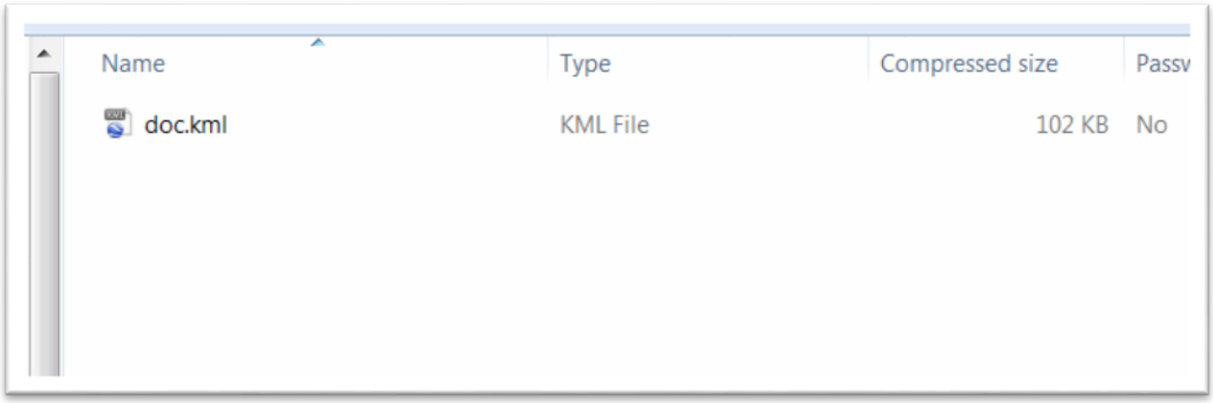


4. We want the KMZ file, which is really a zip folder that contains the KML file. If you click on the KMZ file without unzipping it, the lawyer will open in Google Earth.
5. Download the KMZ layer, replace the "KMZ" extension with "zip".

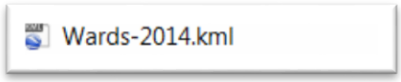




6. Click on the newly created zip file.

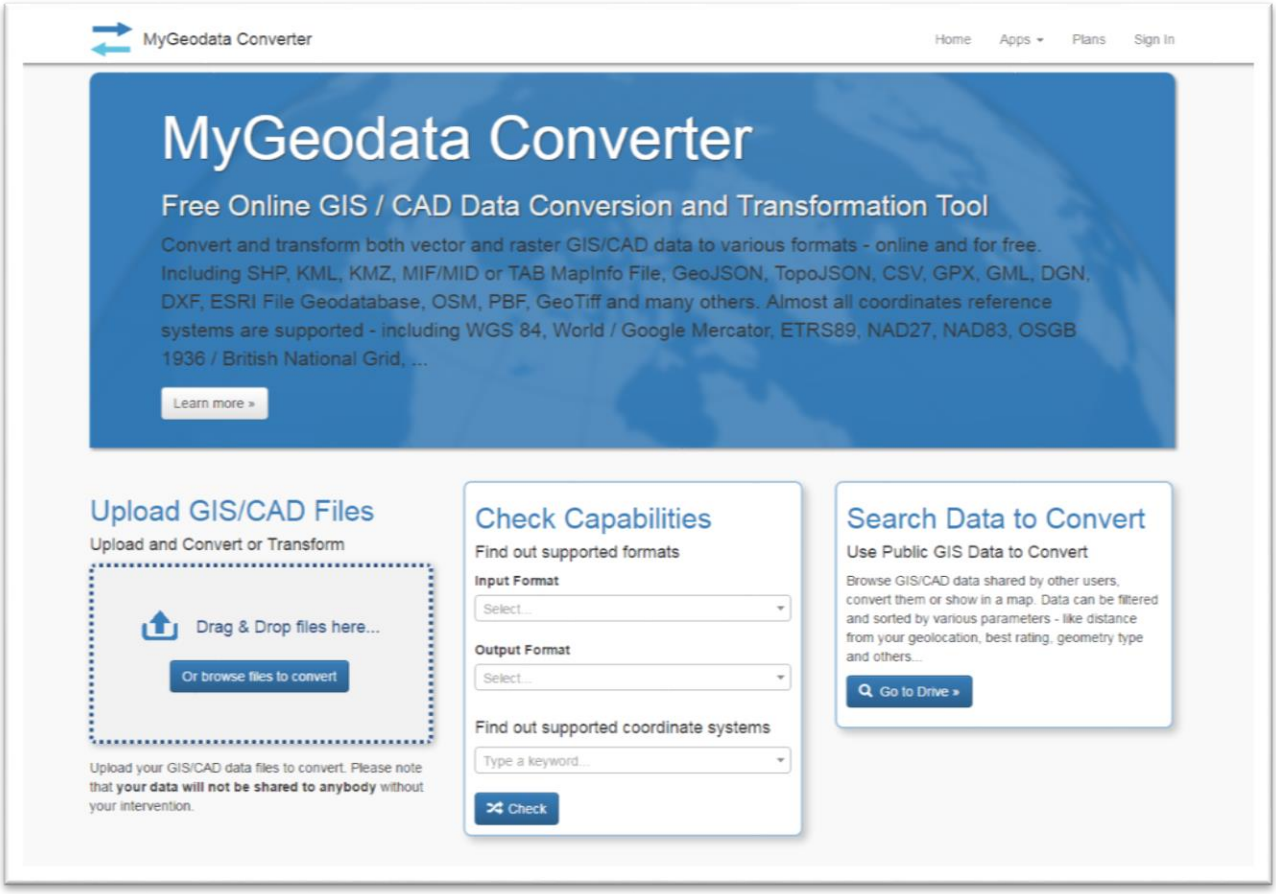


7. There's your KML file. Extract it to a folder you'll be using for this tutorial, and rename it something more recognizable such as Wards2014.



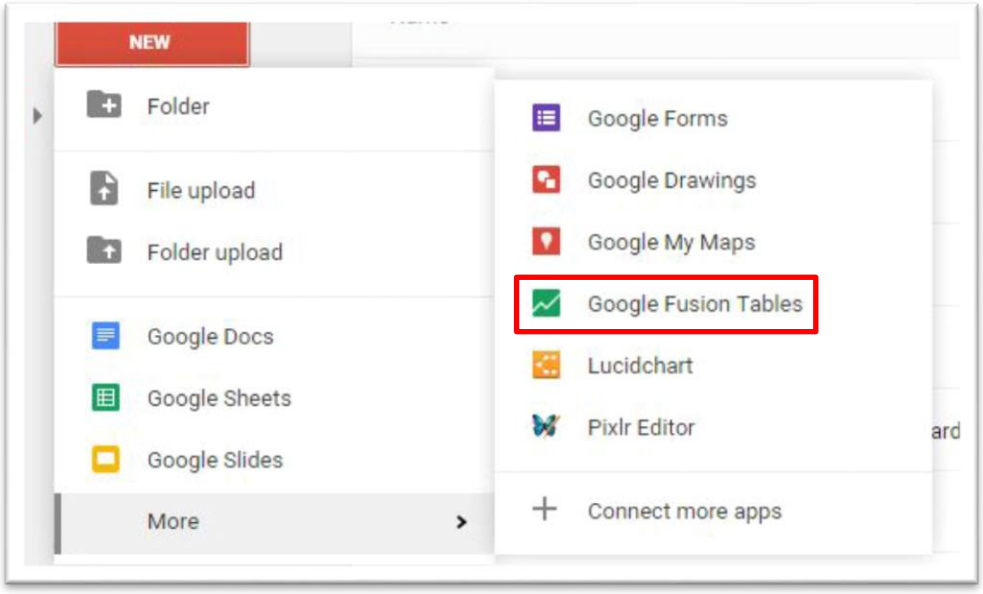
8. Mac users will have to extract the KML file from the KMZ file using a cloud-based service like MyGeodata Cloud.

9. Select the “Converter” option, browse for your file and execute the conversion.

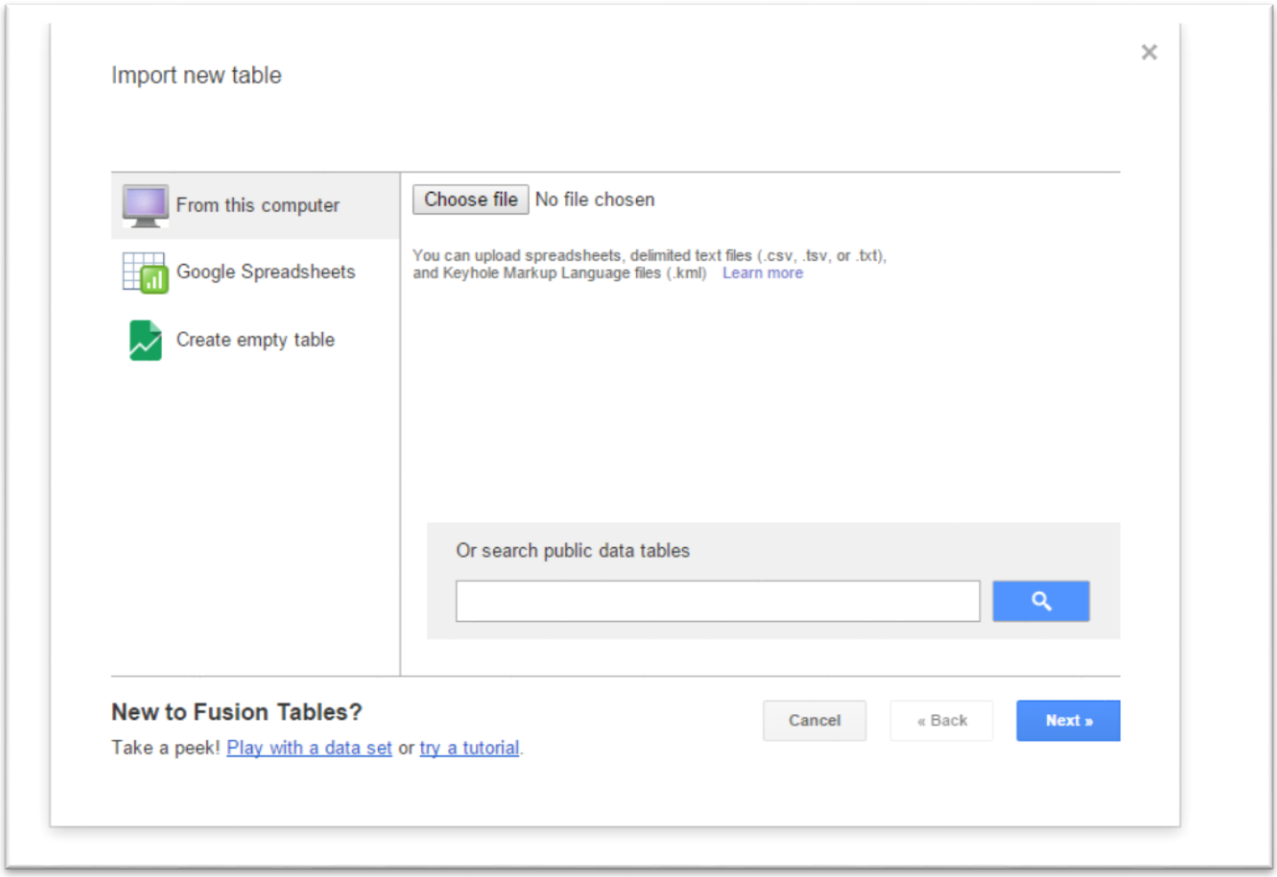


10. So whether you’re using a PC or Mac, you should have two files in our folder and ready to upload to Fusion Tables: the KML and csv files.

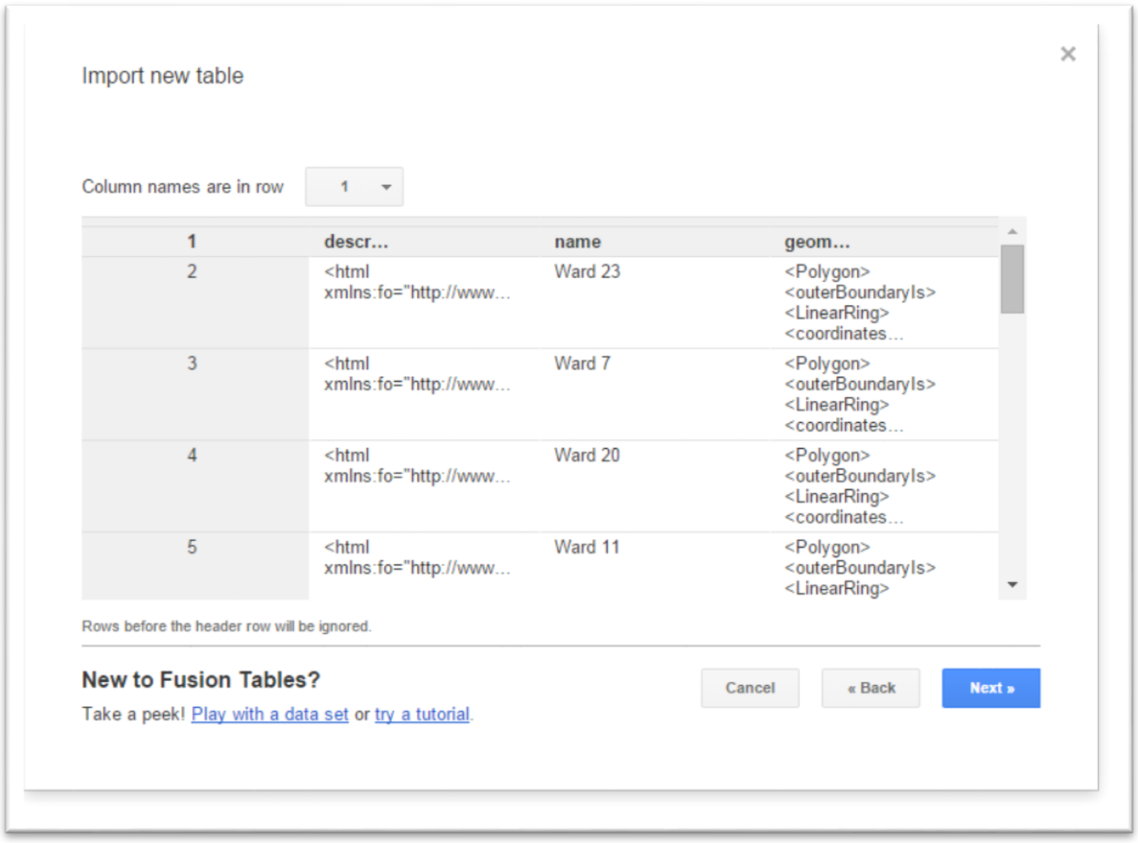
11. Go to your Google Drive and open the Fusion Table icon.

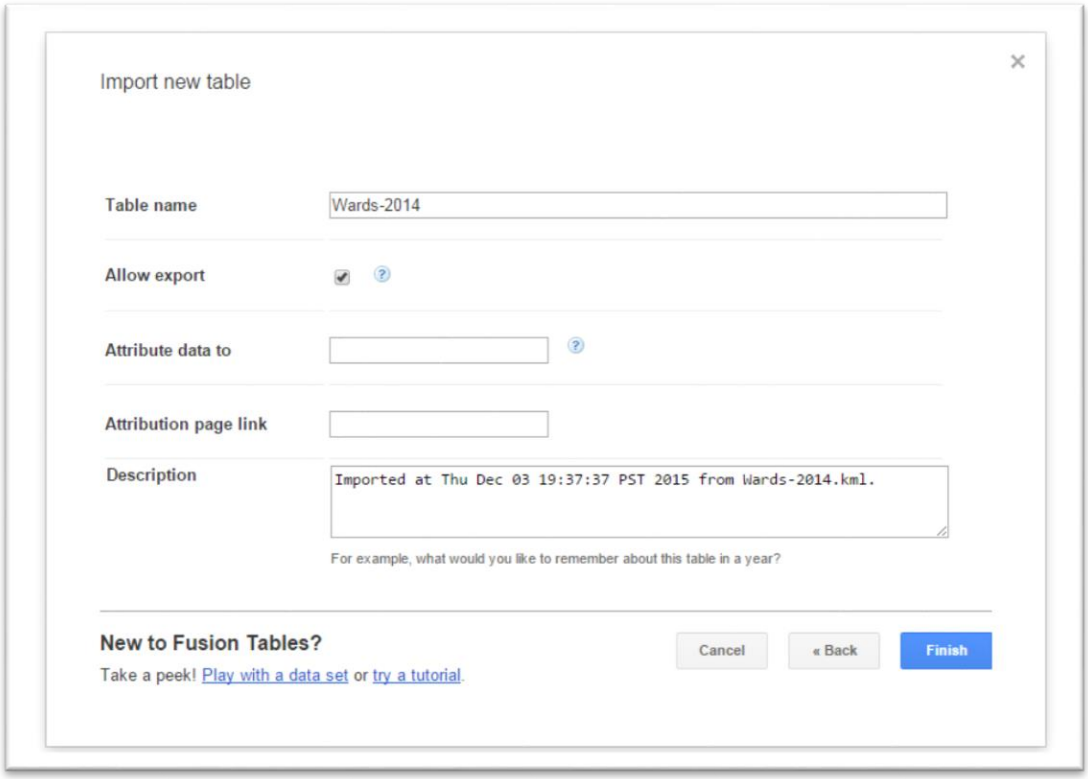


12. Click on the Google Fusion Tables icon.



13. Click on the “Choose file” tab to browse for your ward kml file and import it.




Import new table
Table name
Wards-2014
Allow export
Attribute data to
Attribution page link
Description
Imported at Thu Dec 03 19:37:37 PST 2015 from Wards-2014.kml.
For example, what would you like to remember about this table in a year?
New to Fusion Tables?
Take a peek! Play with a data set or try a tutorial.
Cancel
« Back
Finish

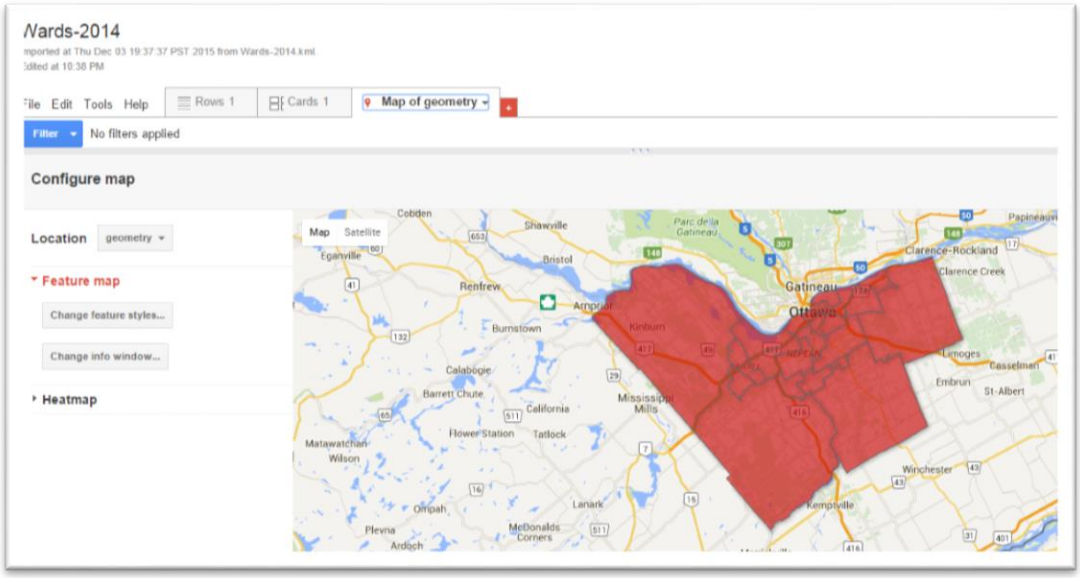
14. The Description column contains the geographic information that Google will need to place the boundaries on a map. You'll notice that the "name"

field has the ward name and the number. This is the same as the ward field

	A	B
1	ward	NumberOfViolations
2	WARD 12	6317
3	WARD 14	4147
4	WARD 17	2272
5	WARD 16	1686
6	WARD 13	1512
7	WARD 15	1435
8	WARD 8	1407
9	WARD 10	1122
10	WARD 7	1110
11	WARD 18	1071
12	WARD 11	961
13	WARD 3	949

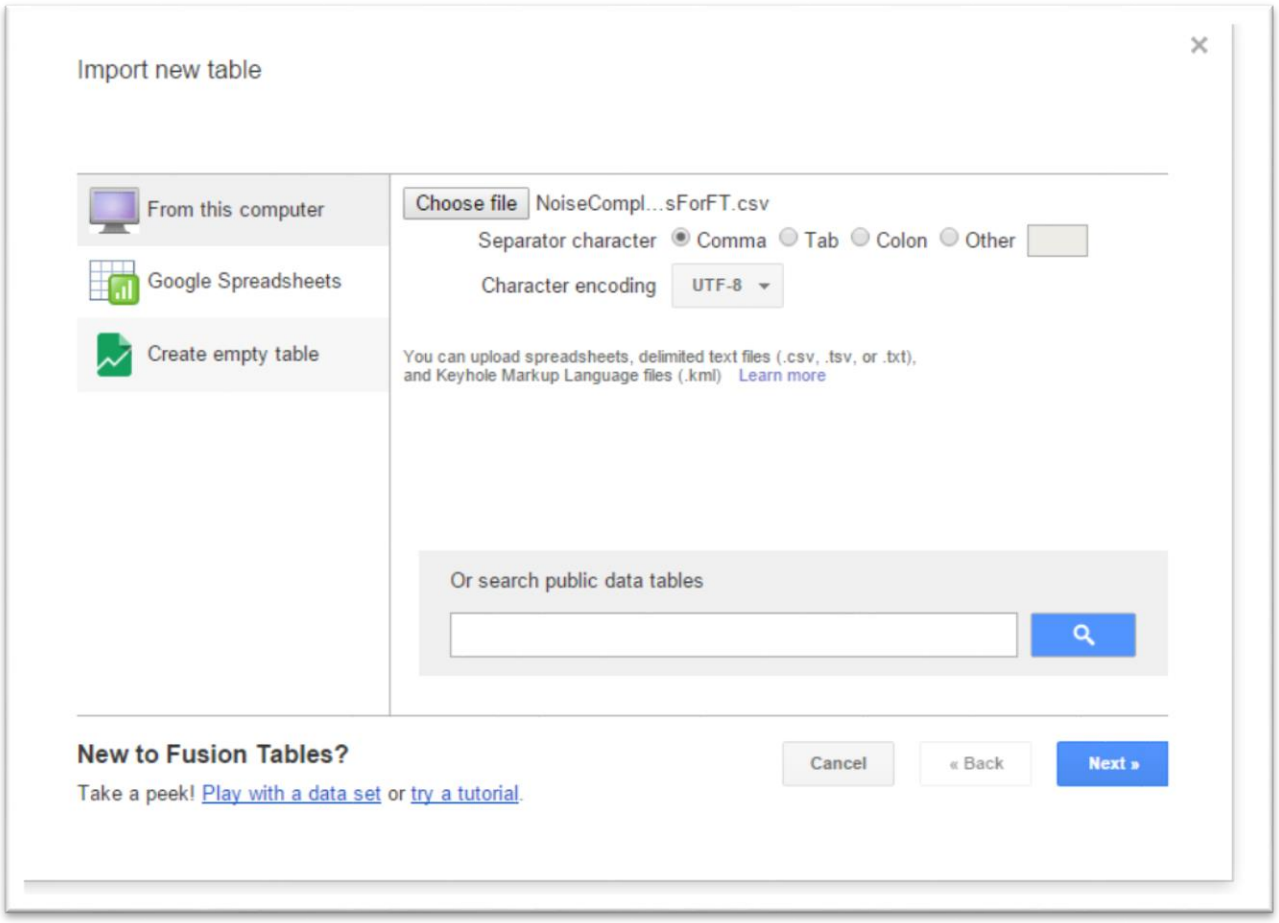
in our csv file.

15. We will join the two ward fields in Fusion Tables.
16. Now let's return to the ward kml file what we've just uploaded. Click on the "Map of geometry" tab to see what the ward shapes look like on a map.



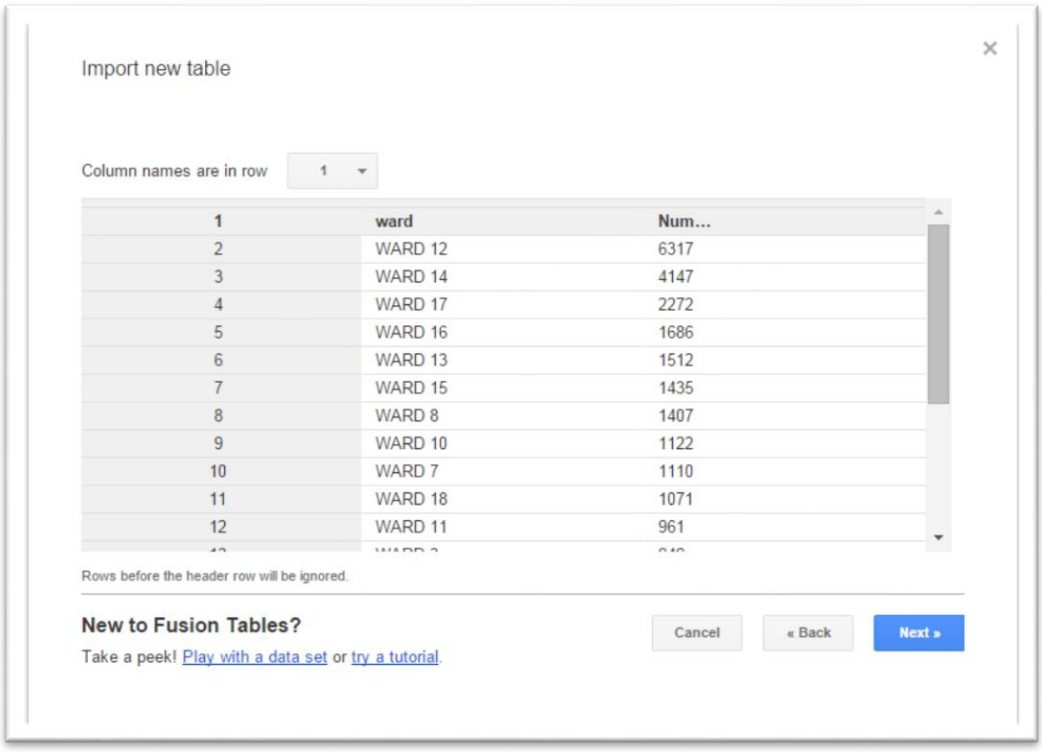
17. So far, so good.

18. Return to your Google Drive and import the csv using the same steps we employed to upload the kml file.

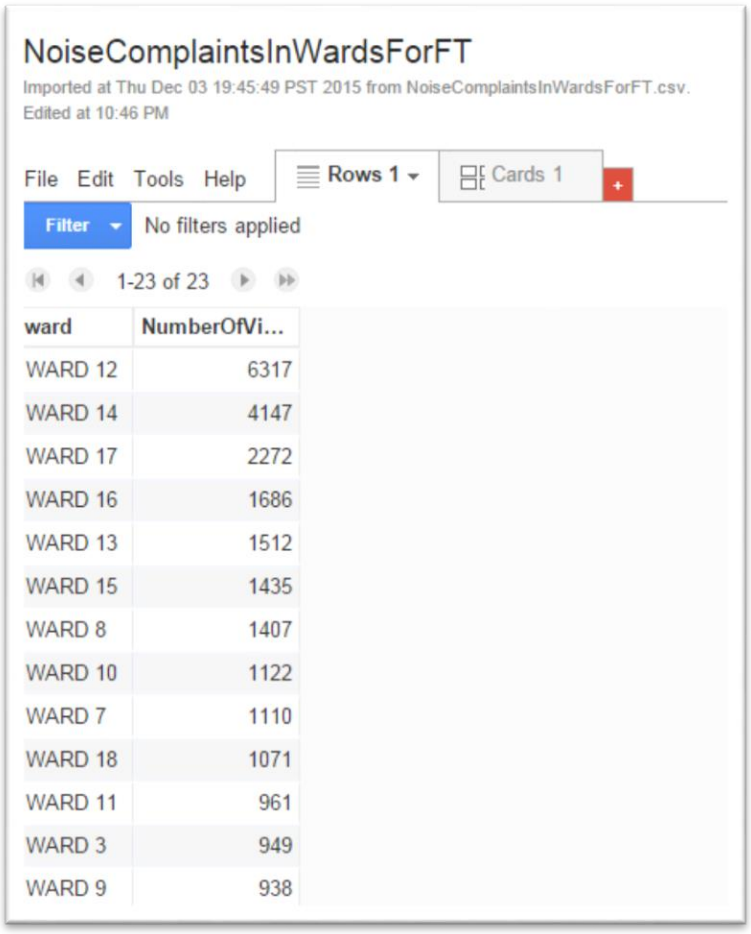


19. Fusion Tables recognizes the separator as a comma.

20.Select Next.



21. Everything looks good. So keep going and finish the upload to obtain the table.



NoiseComplaintsInWardsForFT

Imported at Thu Dec 03 19:45:49 PST 2015 from NoiseComplaintsInWardsForFT.csv.
Edited at 10:46 PM

File Edit Tools Help | Rows 1 | Cards 1

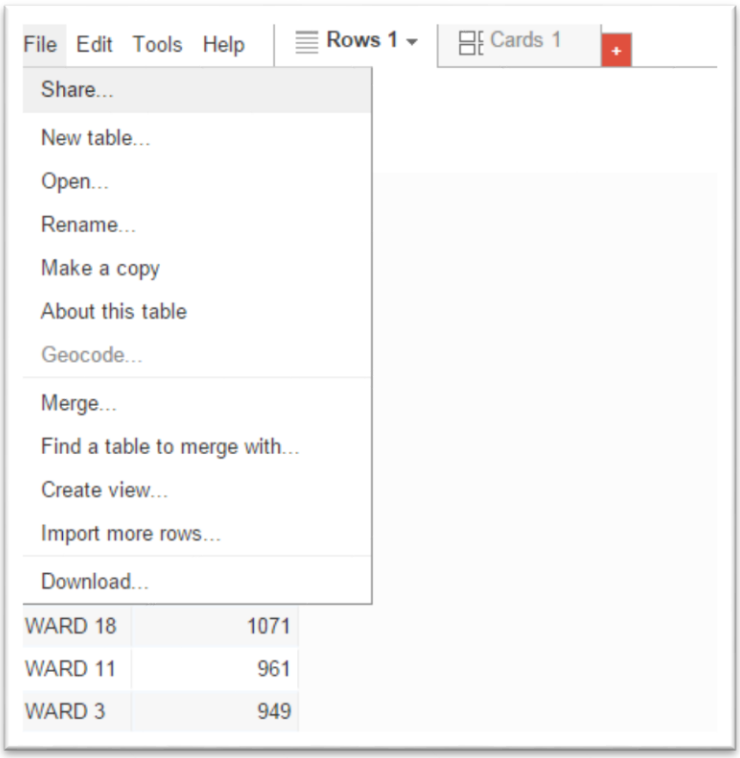
Filter | No filters applied

1-23 of 23

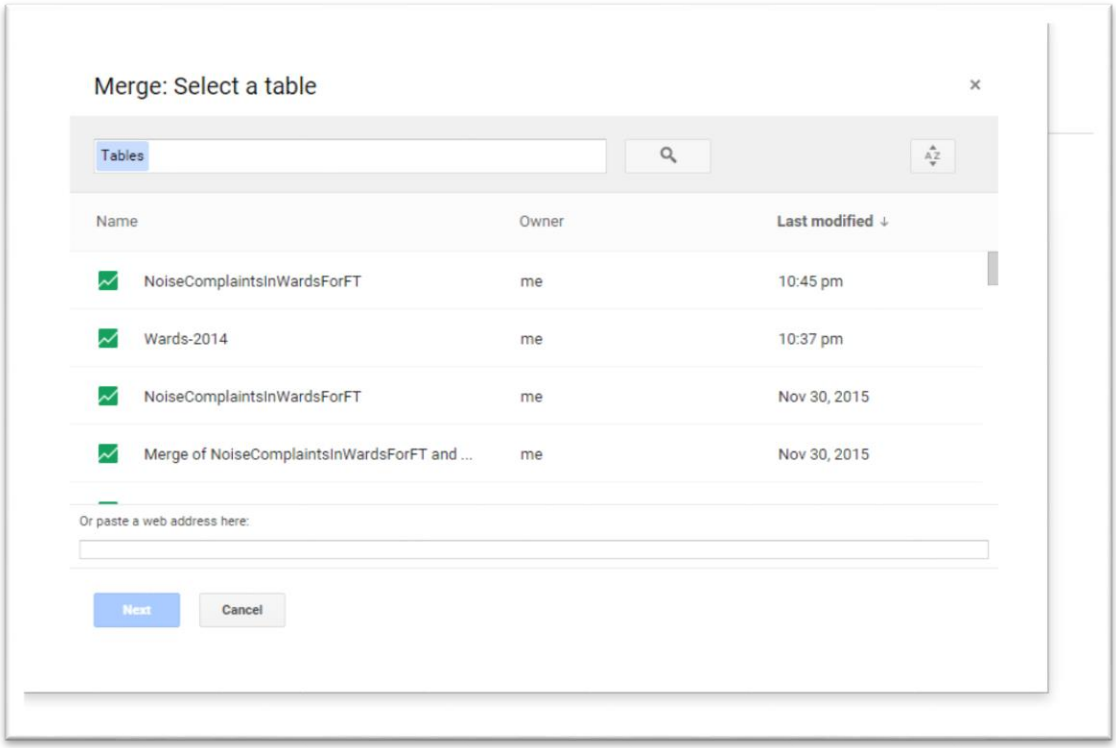
ward	NumberOfVi...
WARD 12	6317
WARD 14	4147
WARD 17	2272
WARD 16	1686
WARD 13	1512
WARD 15	1435
WARD 8	1407
WARD 10	1122
WARD 7	1110
WARD 18	1071
WARD 11	961
WARD 3	949
WARD 9	938

22. Unlike the ward kml file, this one has no geographic tab at the top. That's because there are no geographic coordinates. Intead, we will link the "ward" colunn. To the "Name" column in the kml file.

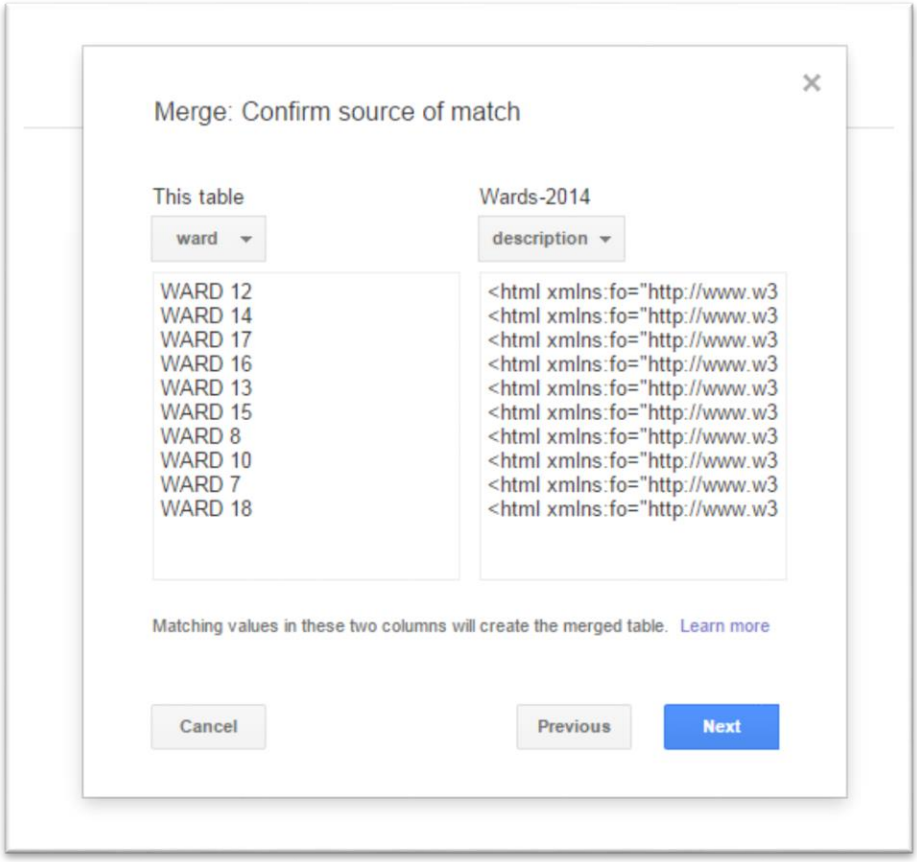
23.Click on the “File” portion of the menu.



24.Select “Merge”.

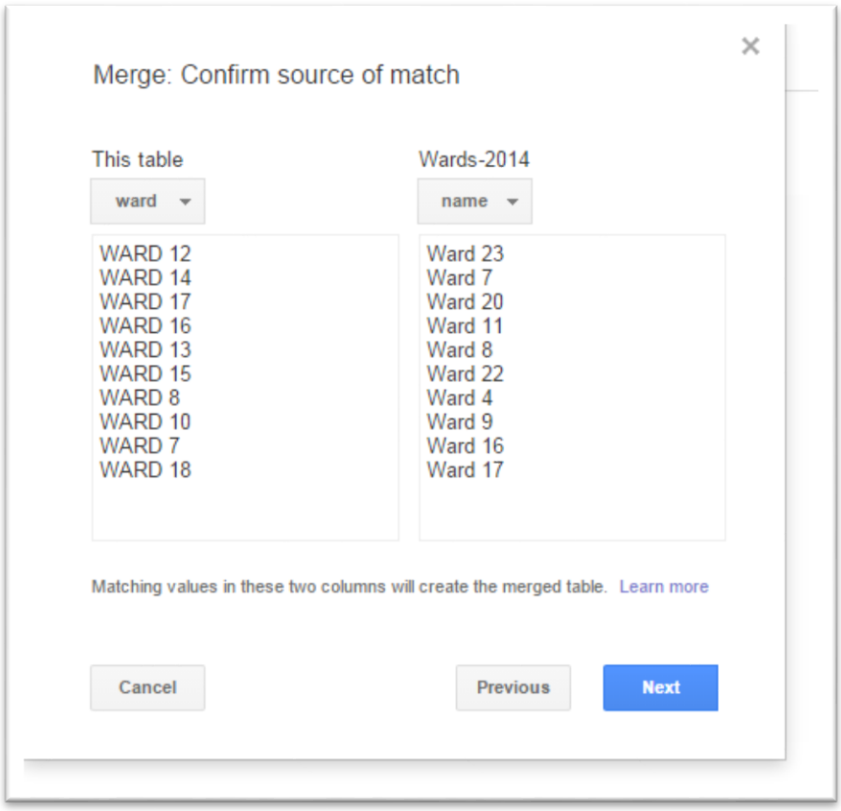


25. Your dialog box will look different because it will have fewer files. Select the "Wards 2014" file, and then the "Next " tab.

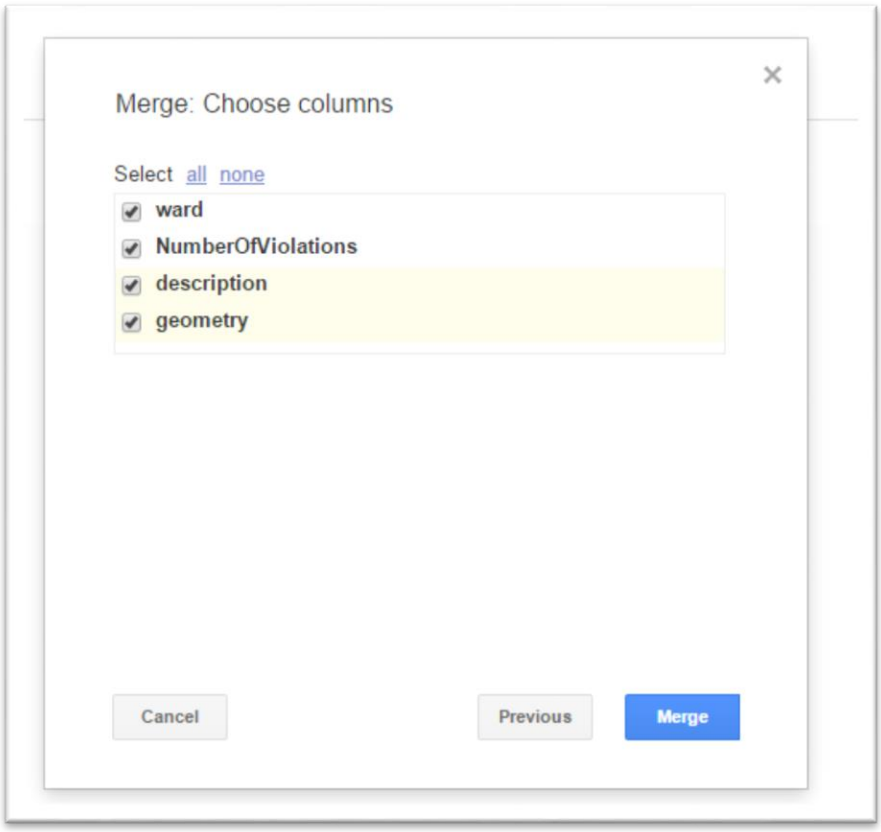


26. We already have the correct column in "This table" which is the csv file with the noise complaints. Click on the downward arrow in the "description"

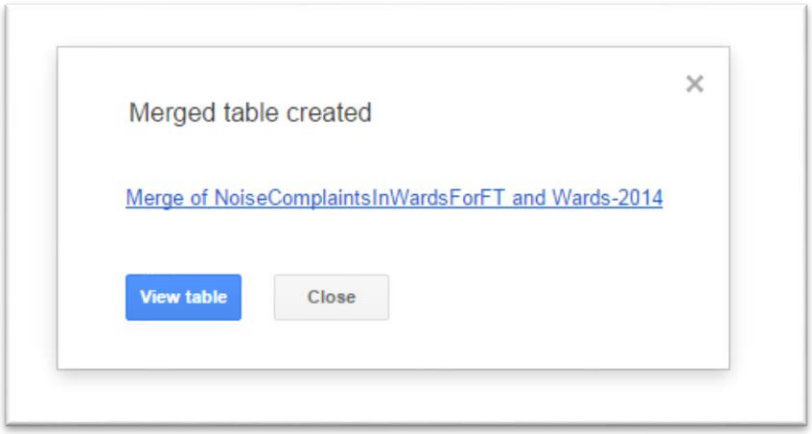
tab under “Wards 2014” to obtain the correct column.



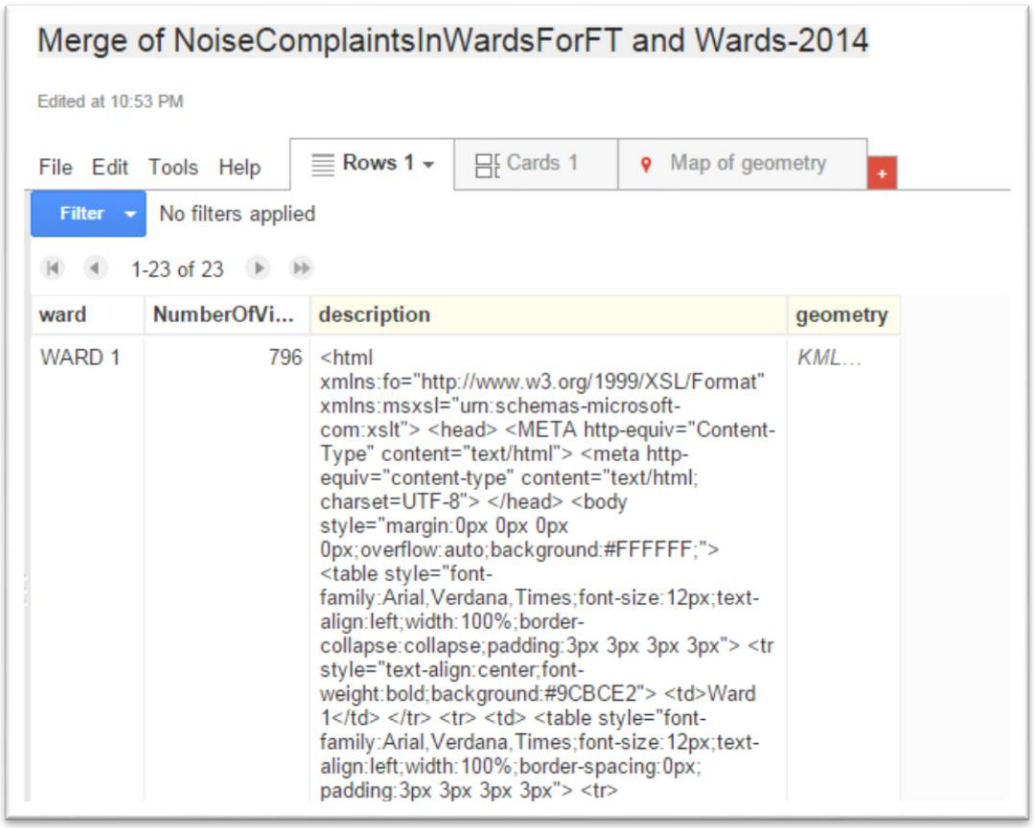
27.Select the “Next” tab.



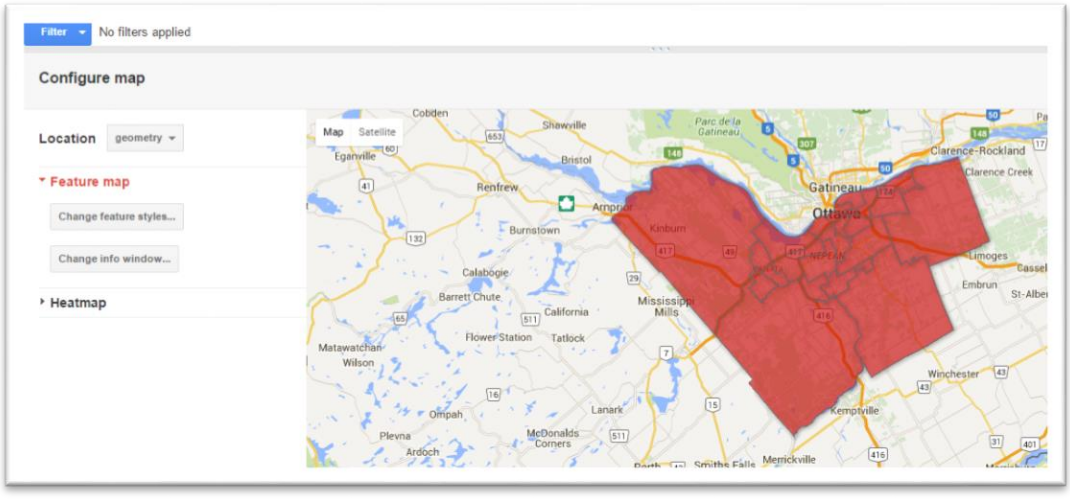
28.The columns in the merged table are all selected. So hit the “Merge” tab.



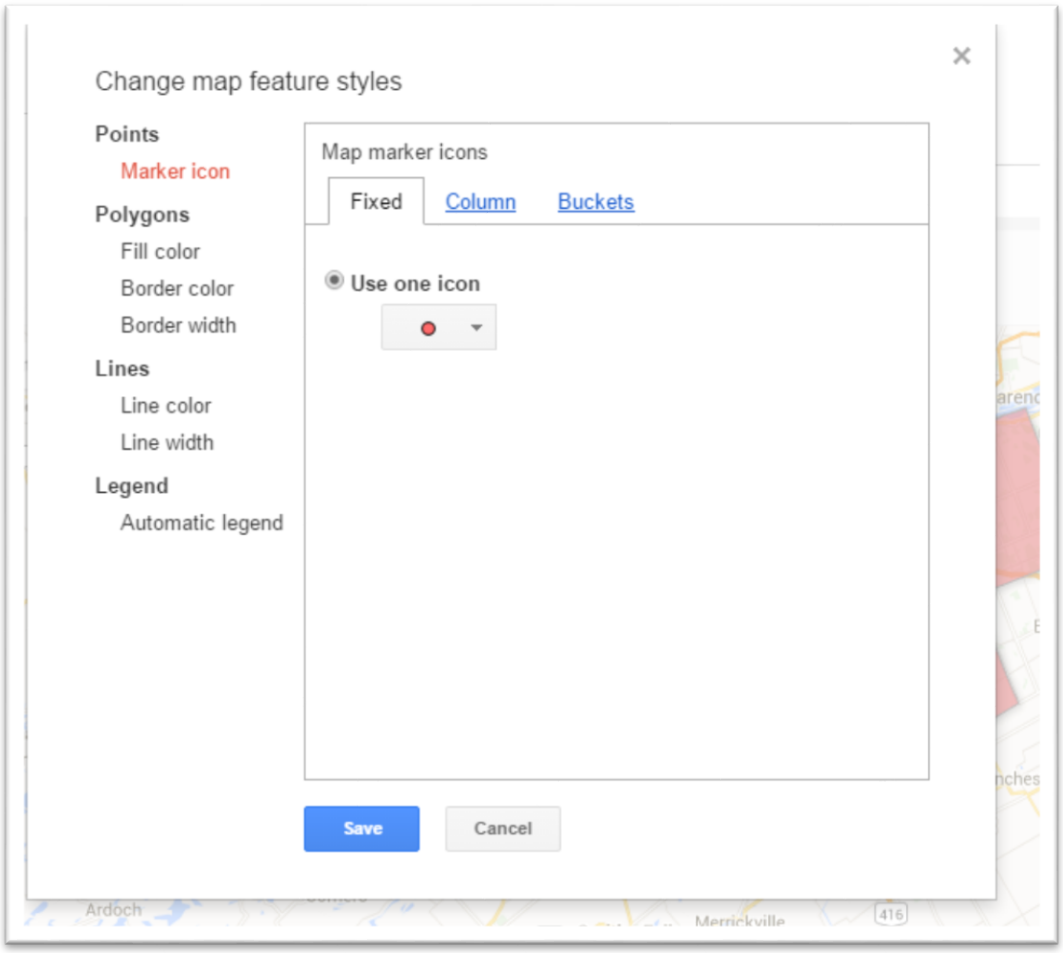
29. View the table.



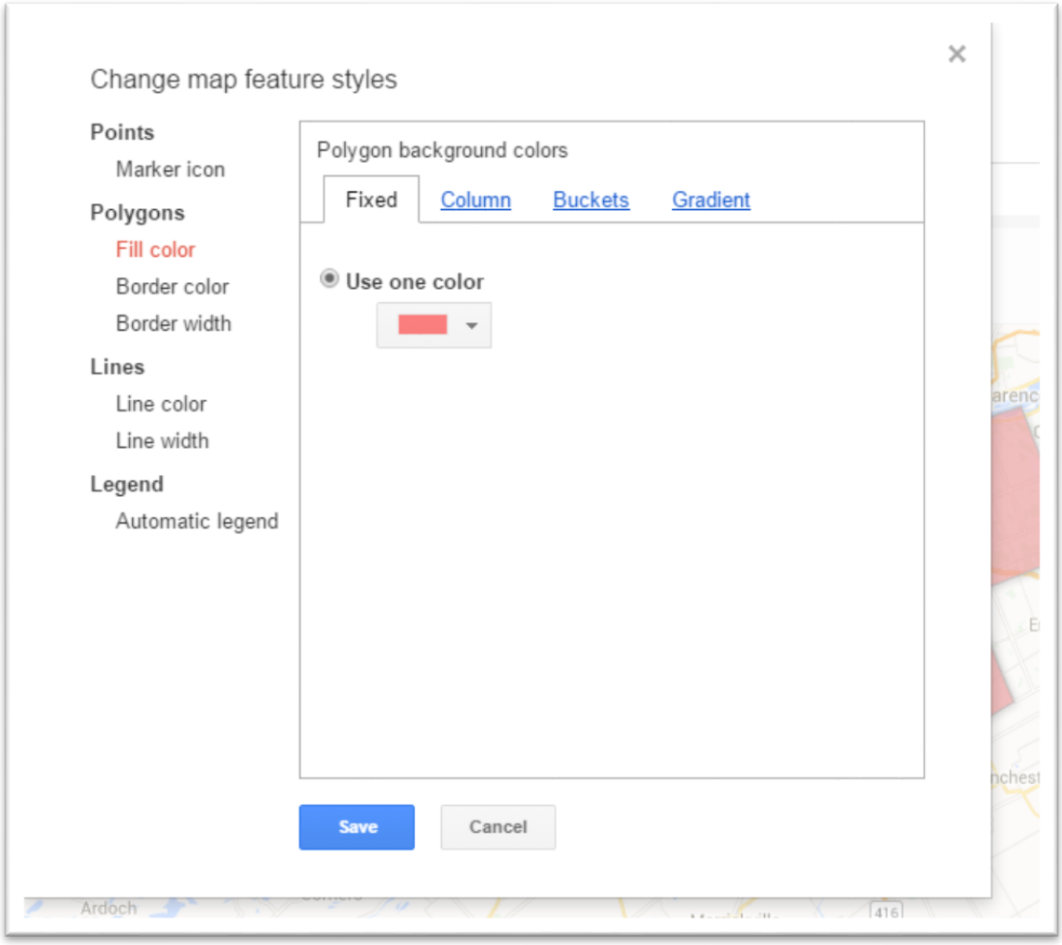
30. This is the tabular view, which shows all the columns. Click on the “Map of geometry” tab to obtain the map.



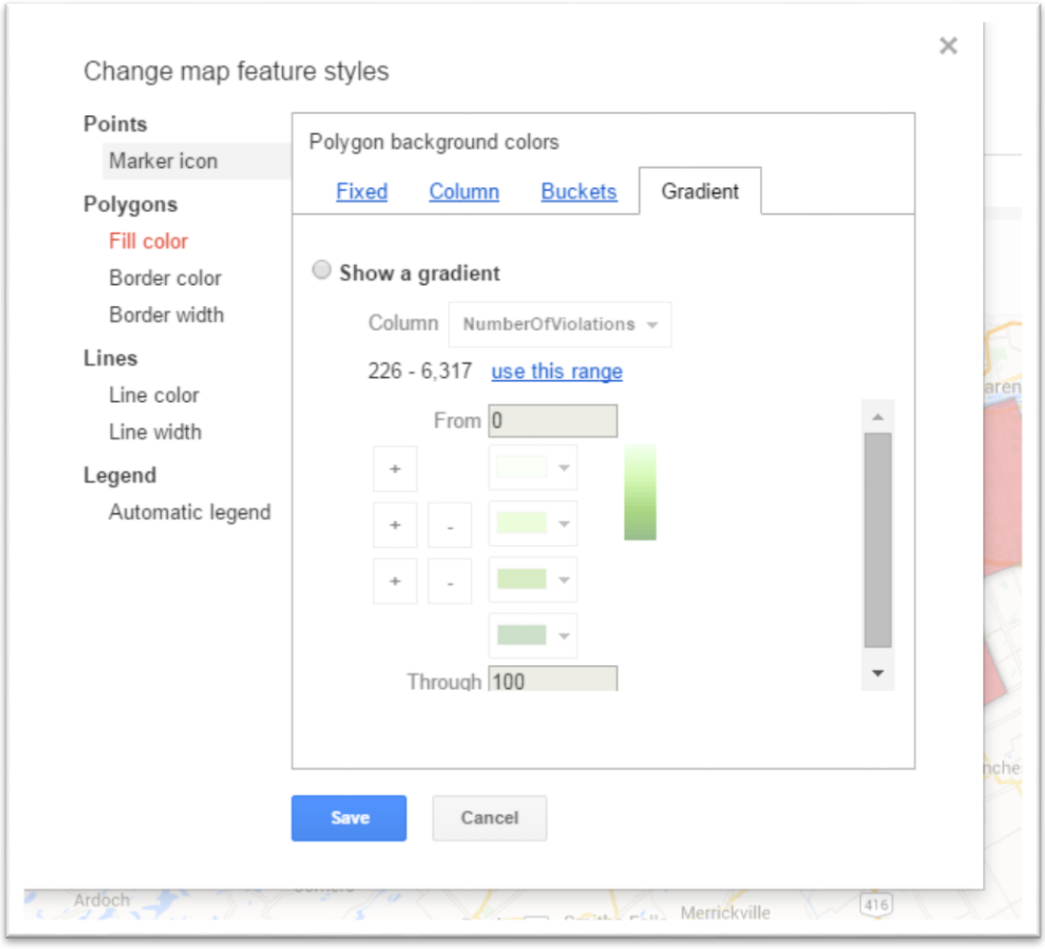
31. As in the case with ArcGIS Online, we have to assign it a colour scheme. To do this, click on the “Change feature styles” tab to the left.



32. Under the “Polygons” section, choose the “Fill color” option.

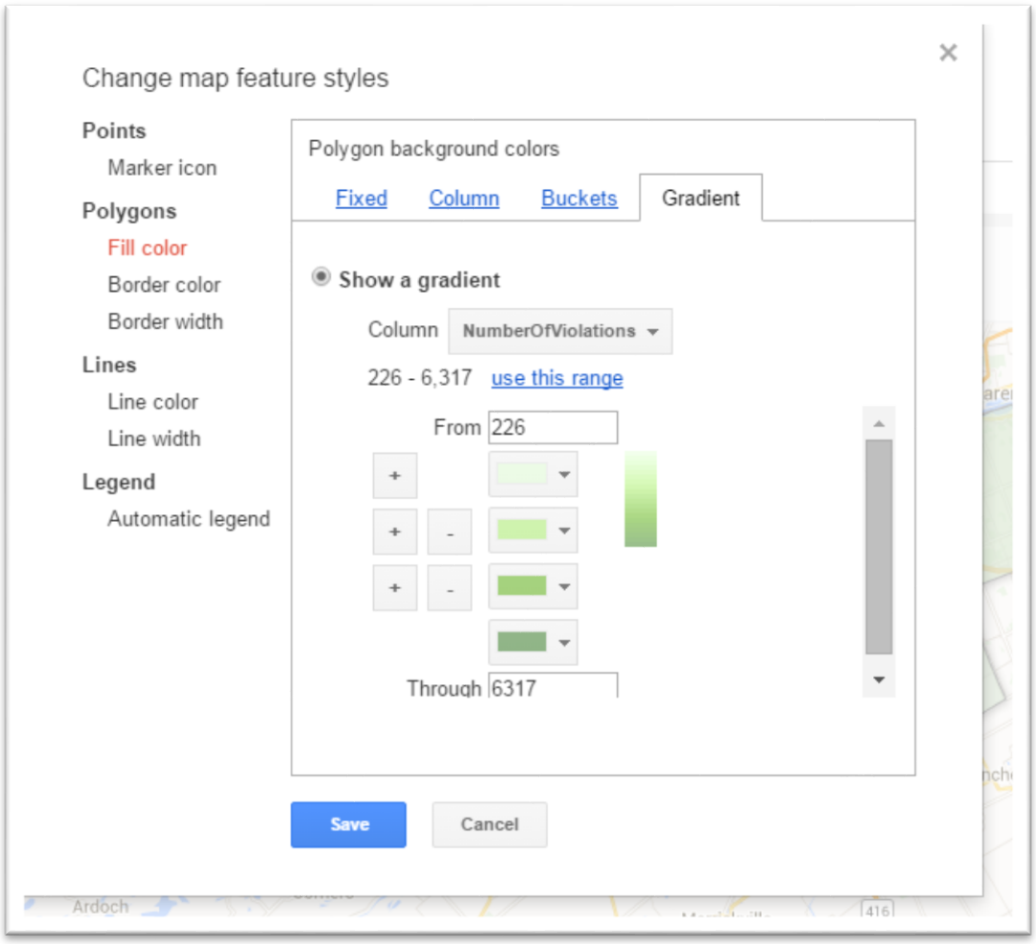


33. Select “Gradient”.

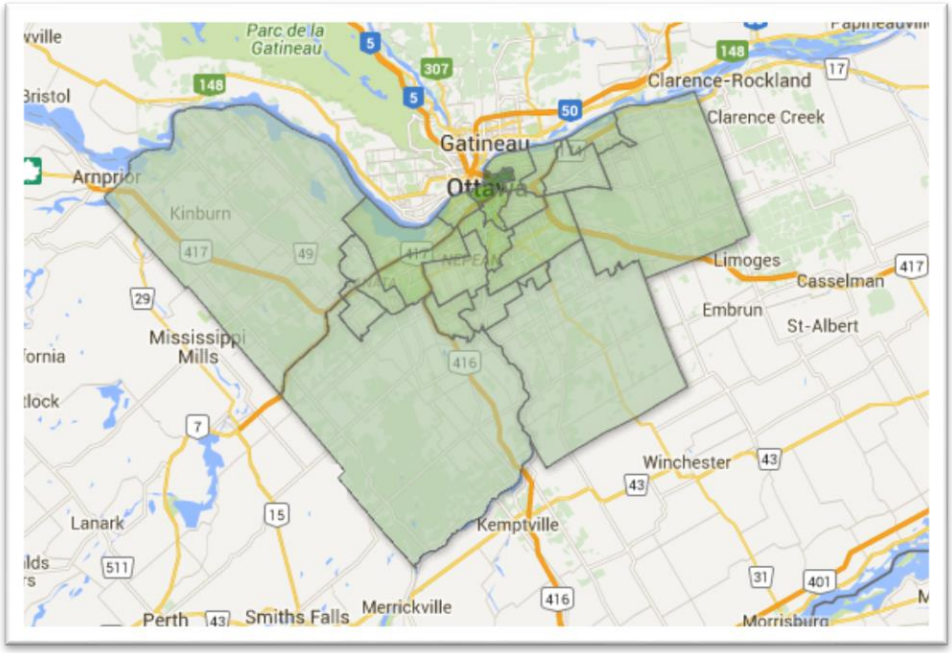


34. Click the radio button to the left of the “Show a gradient” option. Fusion Tables has already identified that you want to visualize the values in the “NumberOfViolations” column. If the desired values were in another column, you’d be able to choose it from the drop-down menu.

35. Click on the “Use this range” link to allow Fusion Tables to use the desired values.

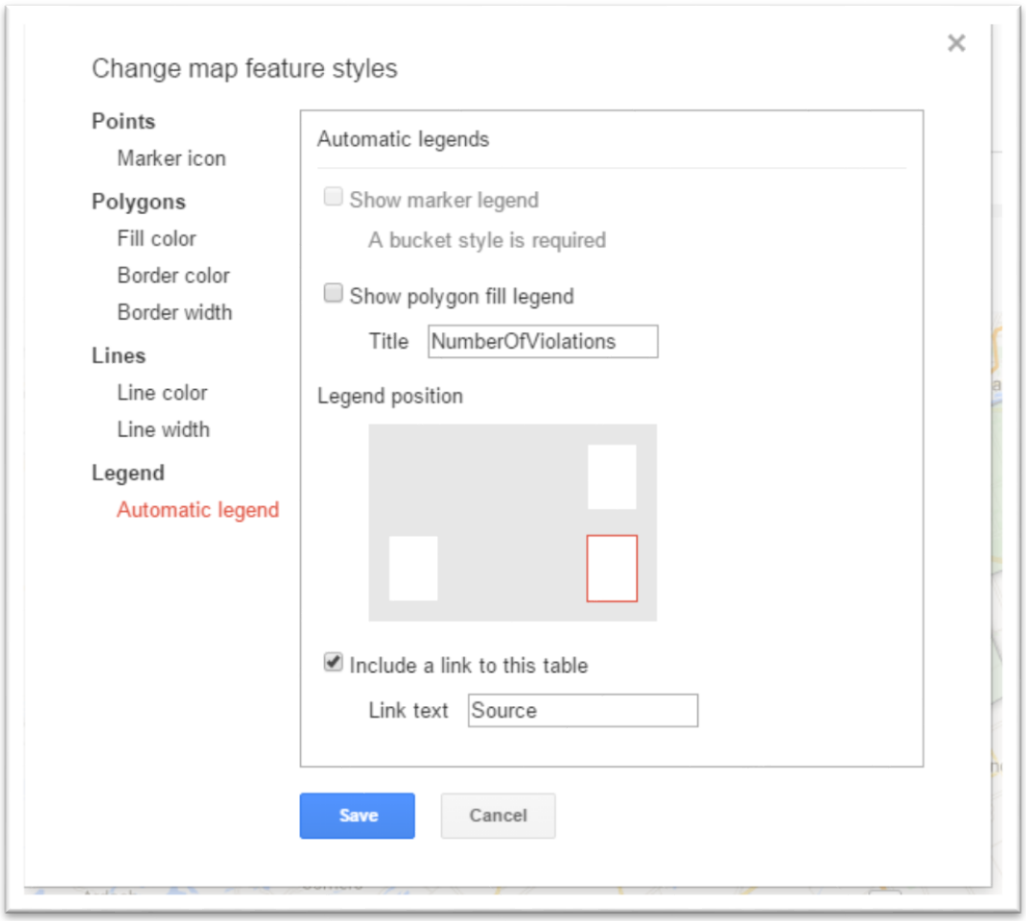


36. Save the result.

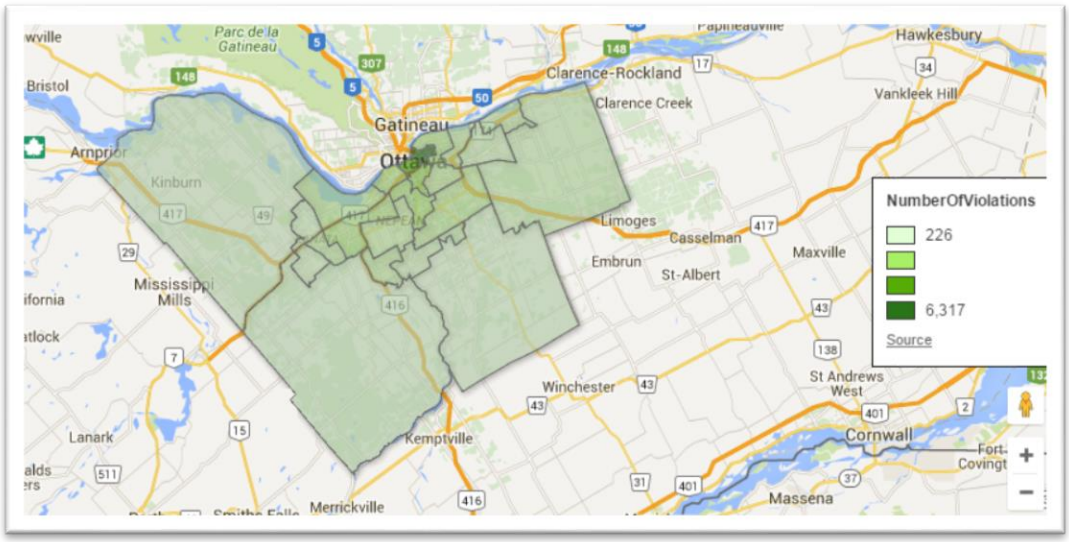


37. Not bad, but the audience has no ideas what the colours mean. The map needs a legend. So let's return to the "Change feature styles" section, and

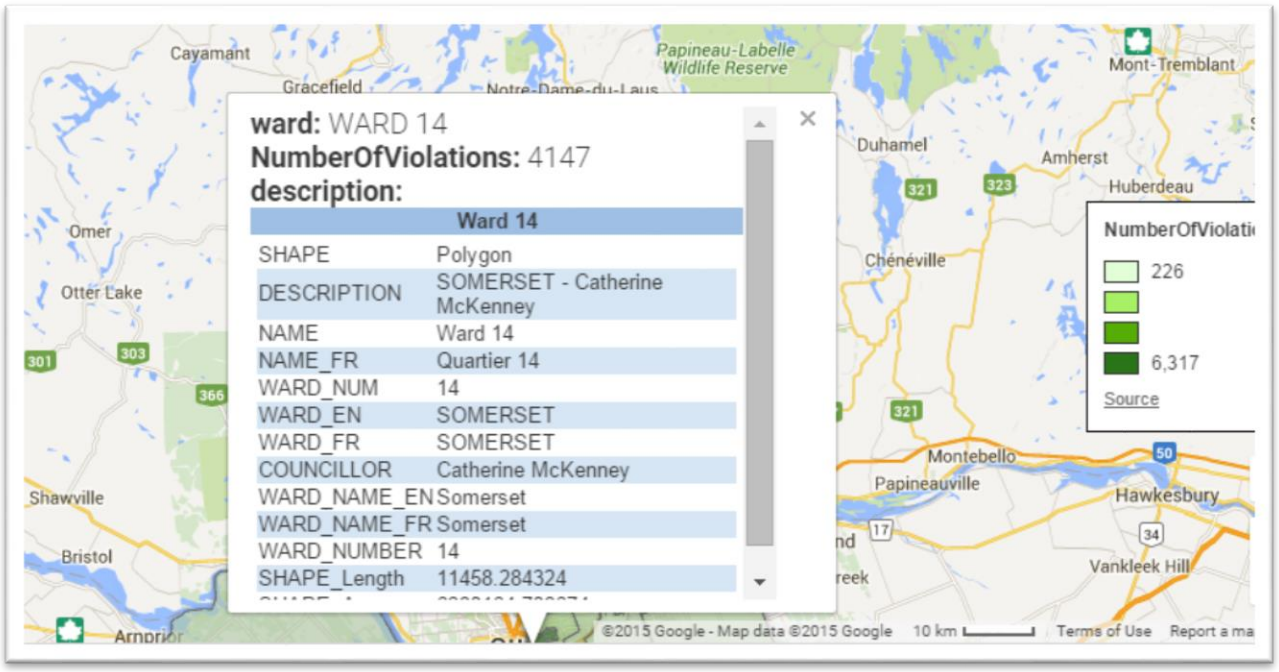
select the “Automatic legend” option on the left.



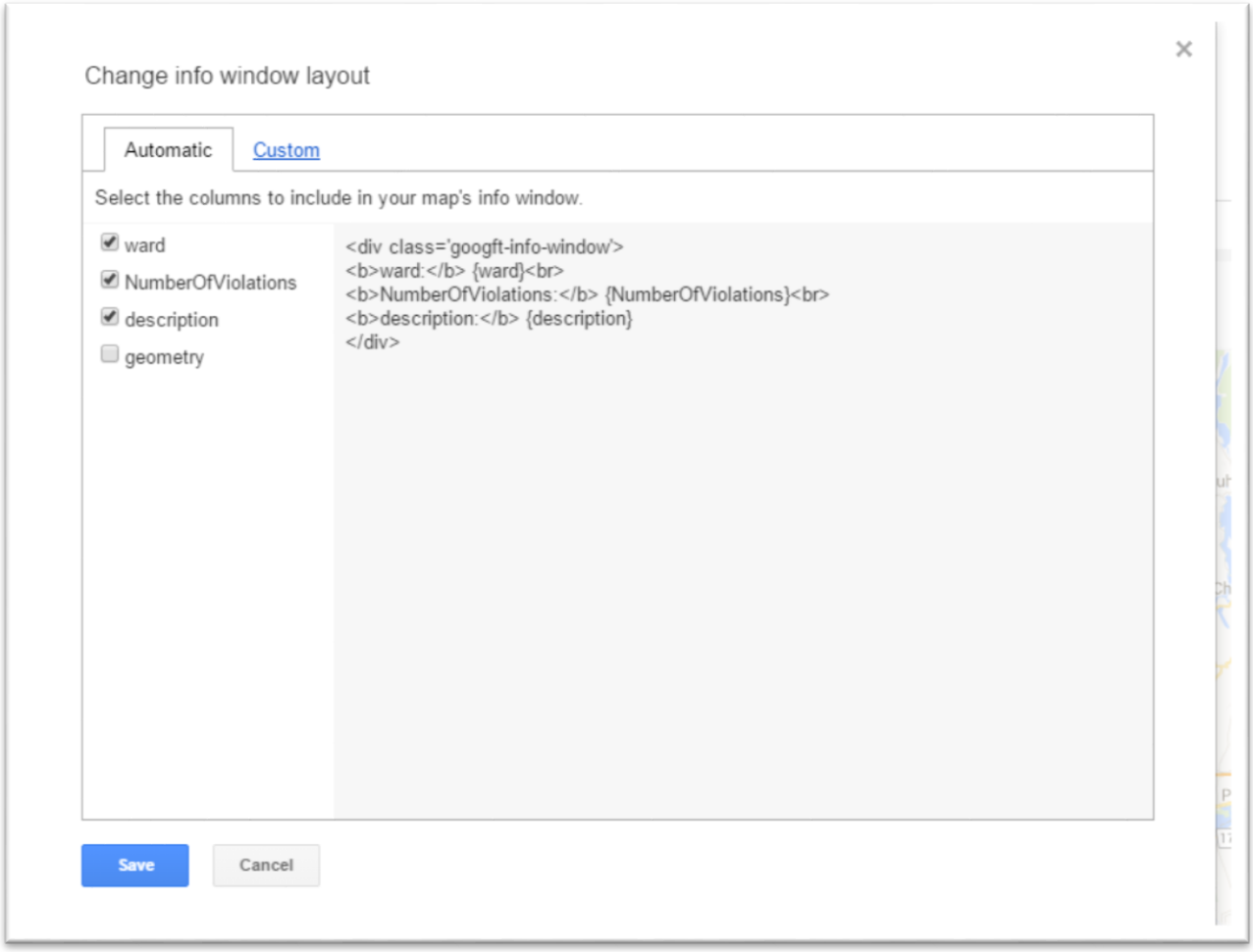
38.Select “Show polygon fill legend”, and save.



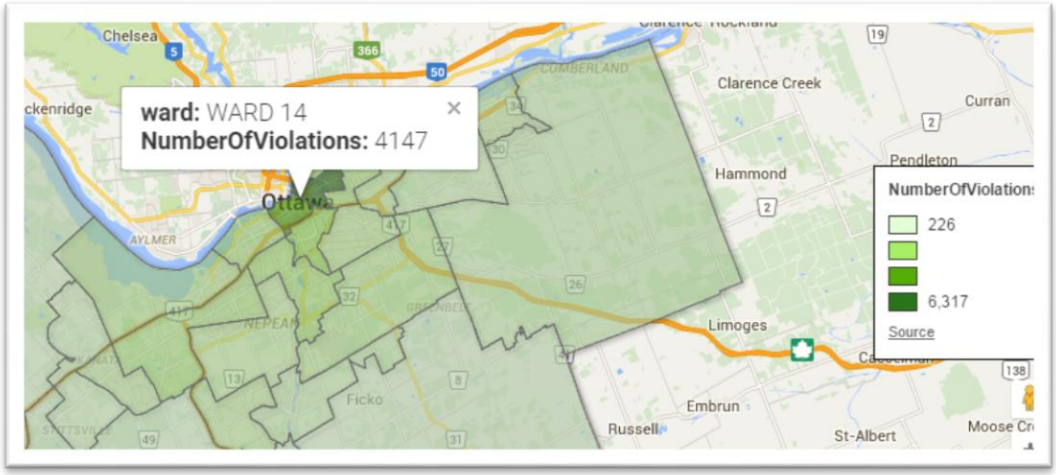
39.That’s better.



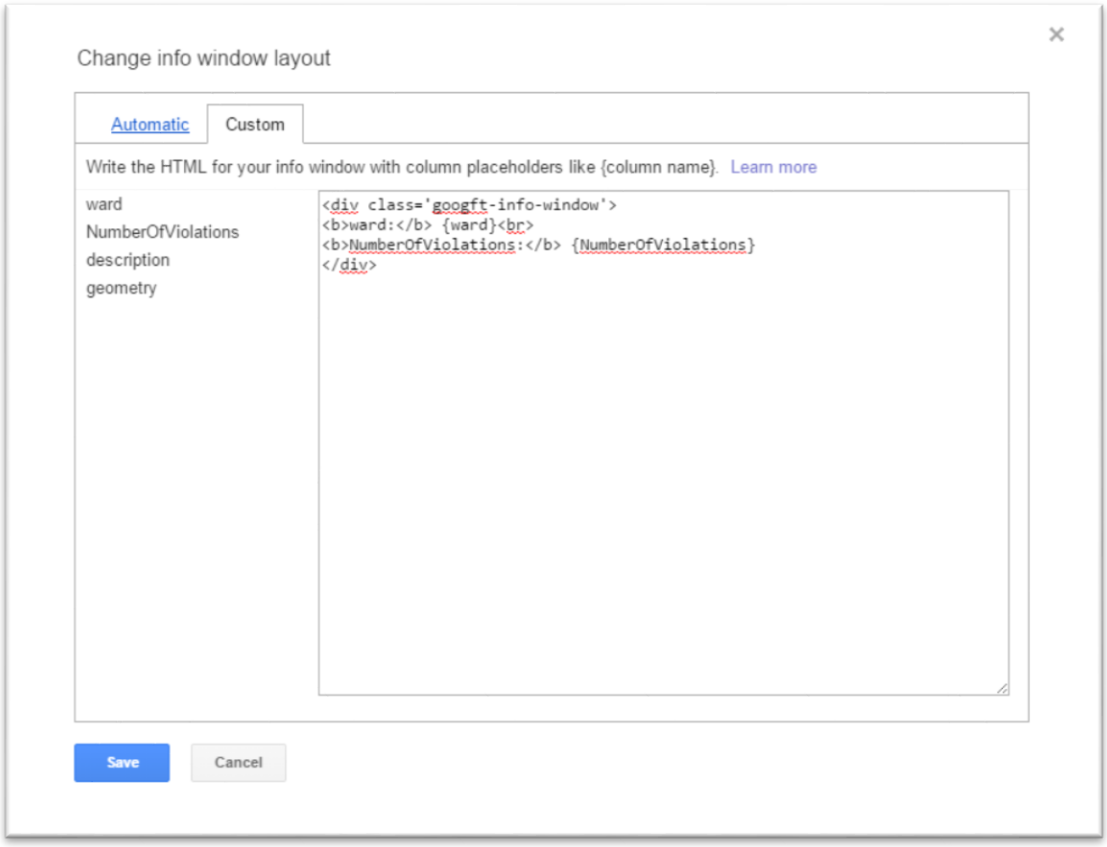
40. The pop-up box is too crowded. To whittle it down, select the “Change info window” tab to the left.



41. De-select “description”, and save the result to return to the map.

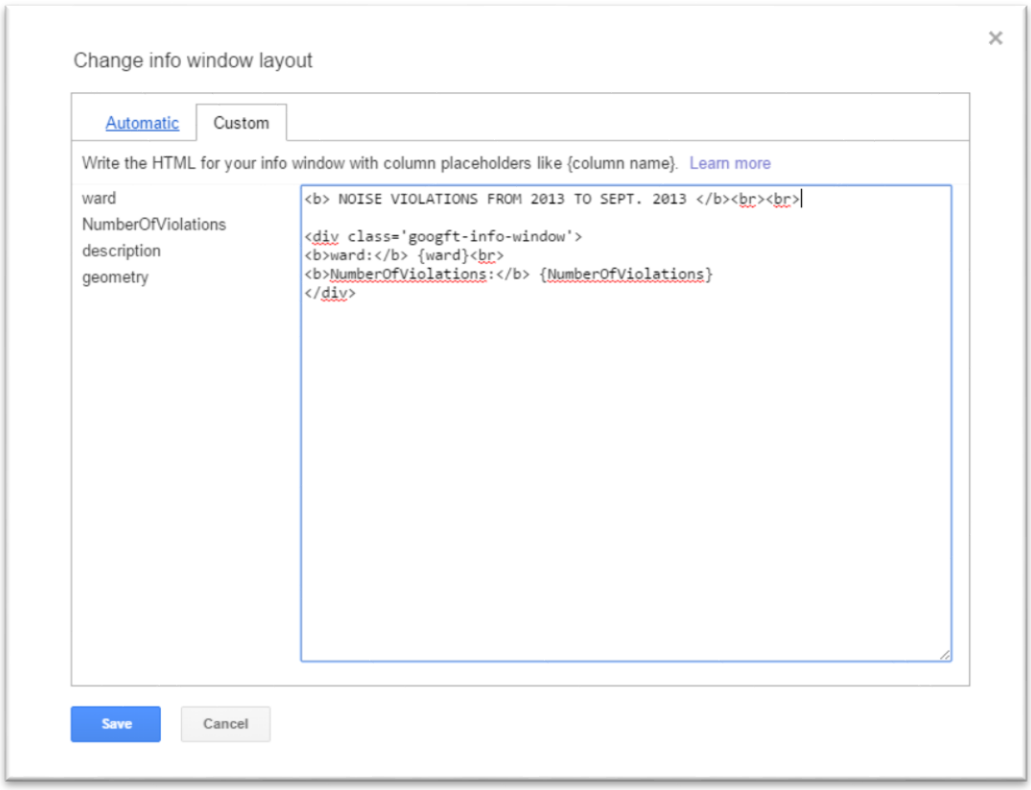


42. Much better. You can also get a little fancier by giving your pop-up box a title and changing the column names. To do this, you can return to the "Change info window" section, and then go to "Custom".

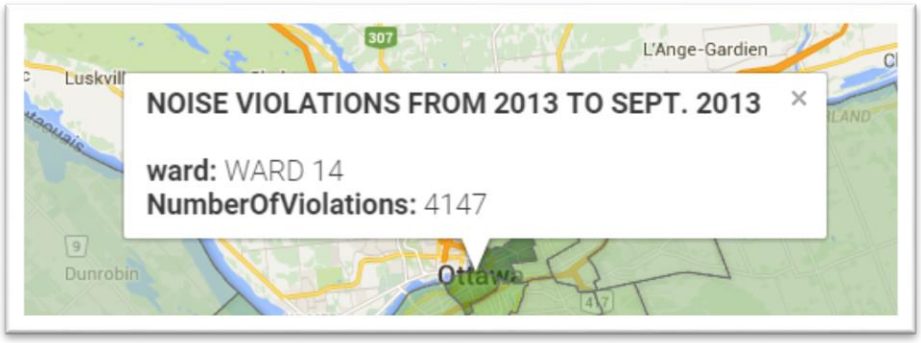


43. If you're familiar with HTML, you'll know what to do. Let's give it a title, by creating space at the top, and typing in a name, with the appropriate bold

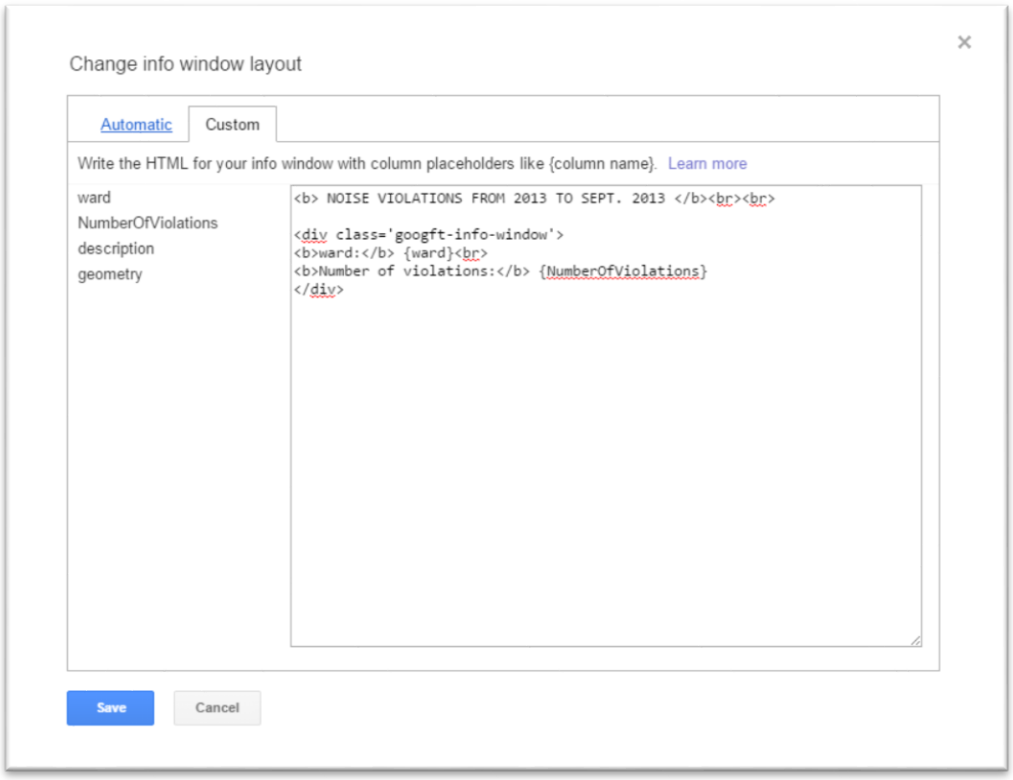
tags on either end.



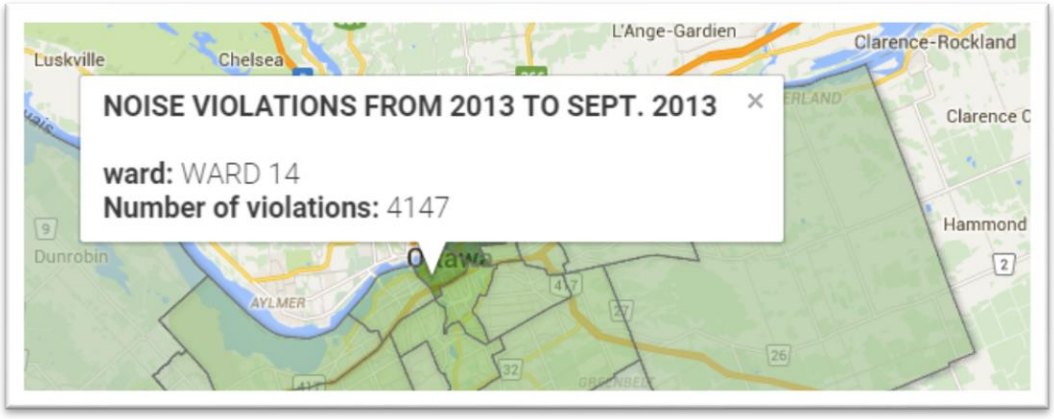
44. We also gave it two page breaks (<br>) to create space between the title and columns. Save the result.



45. We can also clean up the violations title. Return to the “Custom” location.

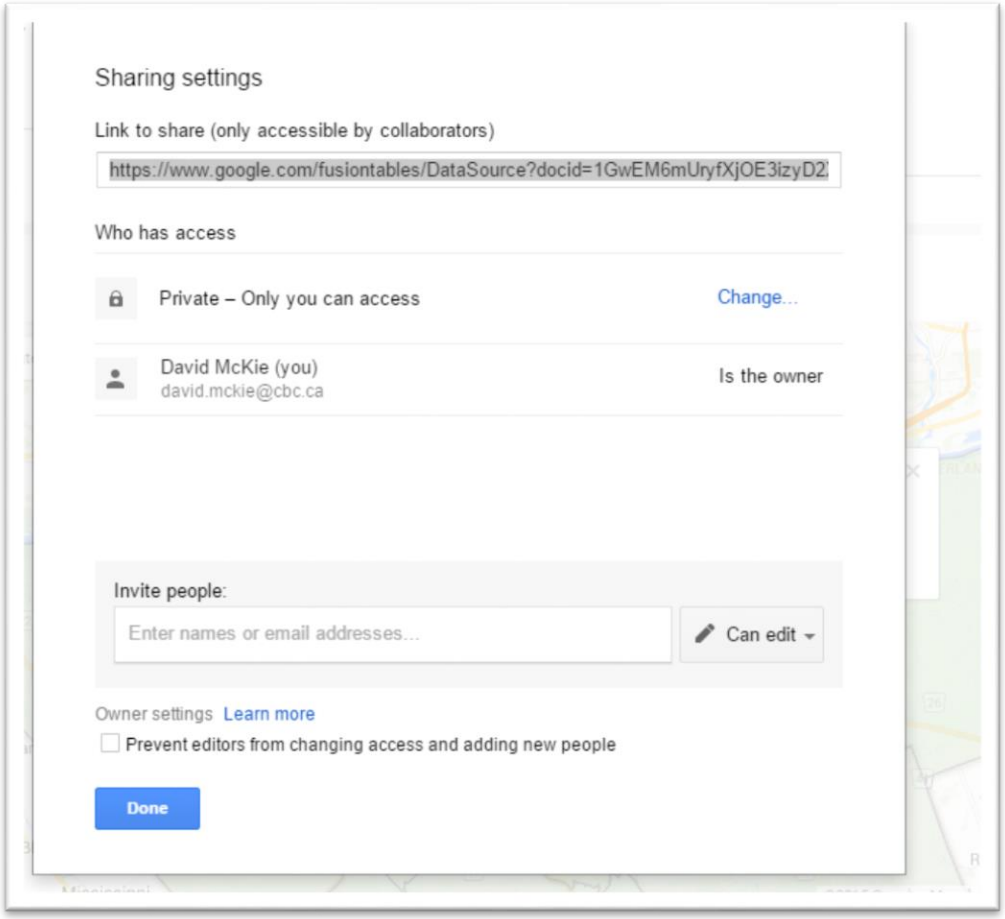


46. We’ve made a name change to the left of the column name, the area that will be displayed on the map. The information to the right of the colon must remain as is because it belongs to the actual table.
47. Save the result.

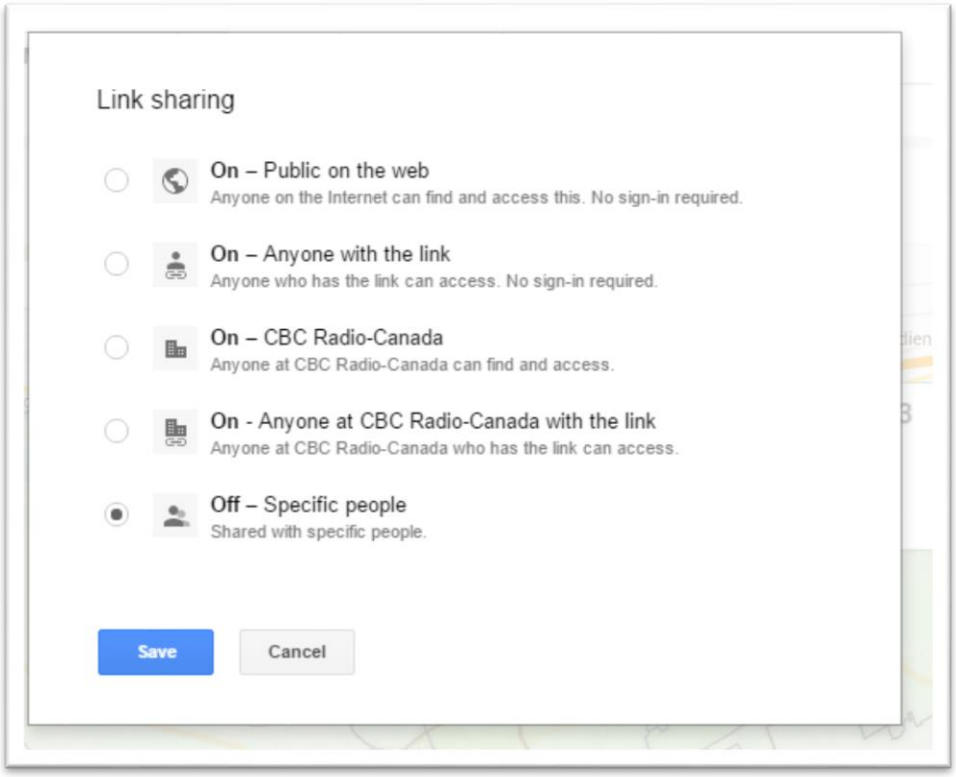


48. If you’re happy with the result, we can share it and get the embed code.

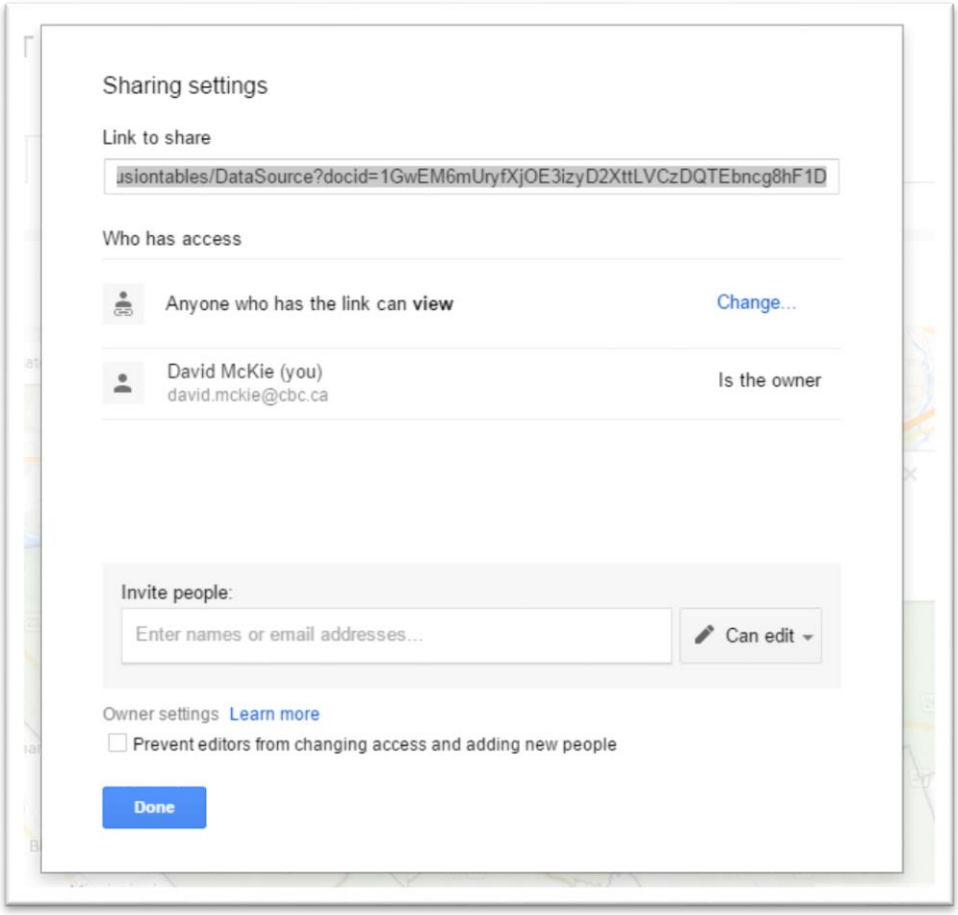
49. Select the “Share” tab to the top right.



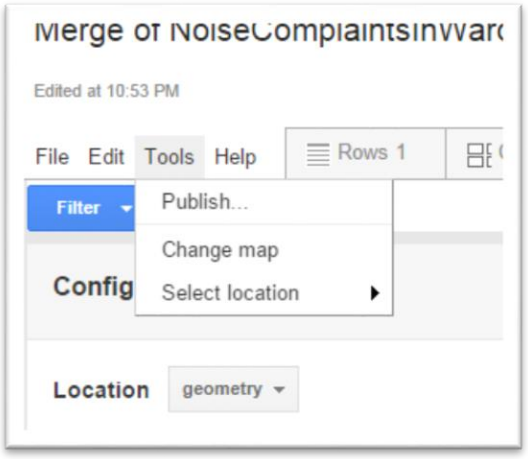
50. Change “Private – Only you can access” by clicking on the “Change” link to the right.

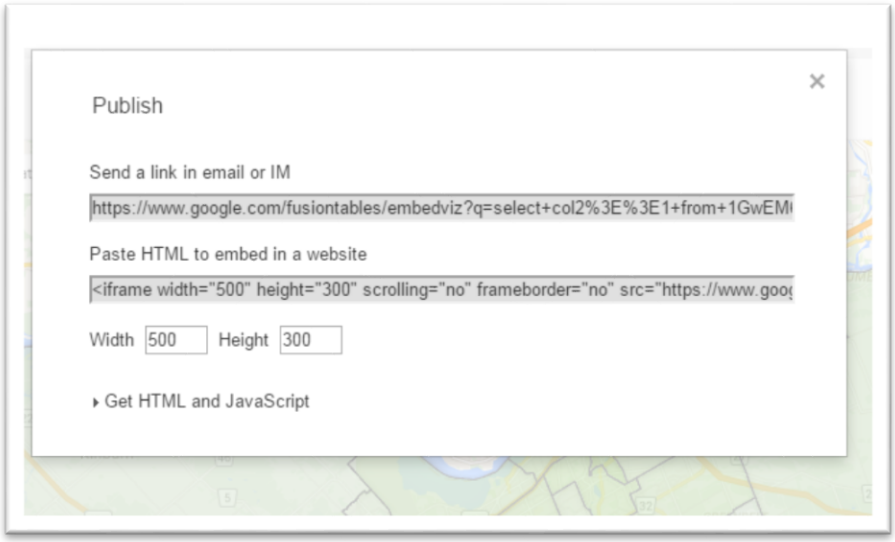


51. Select “Anyone with the link” and save the result.

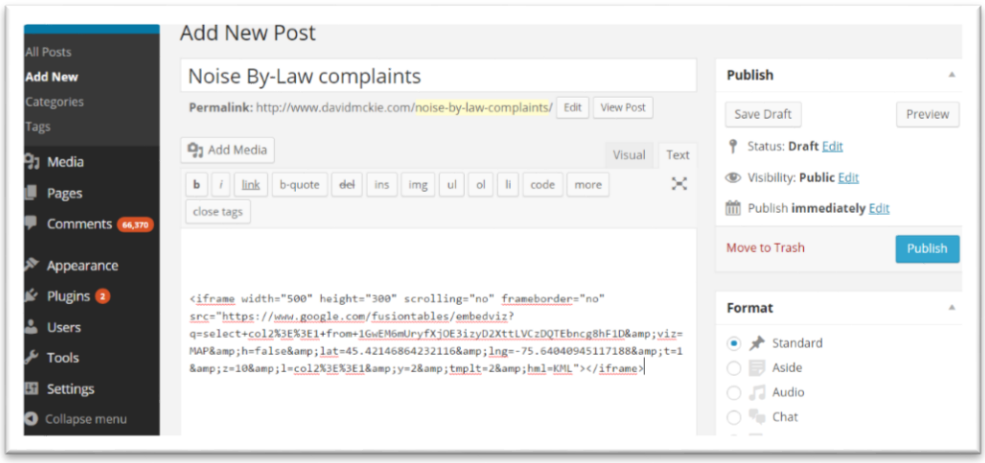


52. You’ll notice the link we can share, which is fine. Select the “Done” tab.
53. Now we want to grab the embed code so we can upload the map to our blog post. To do this, go to the “Tools” section and select “Publish”.

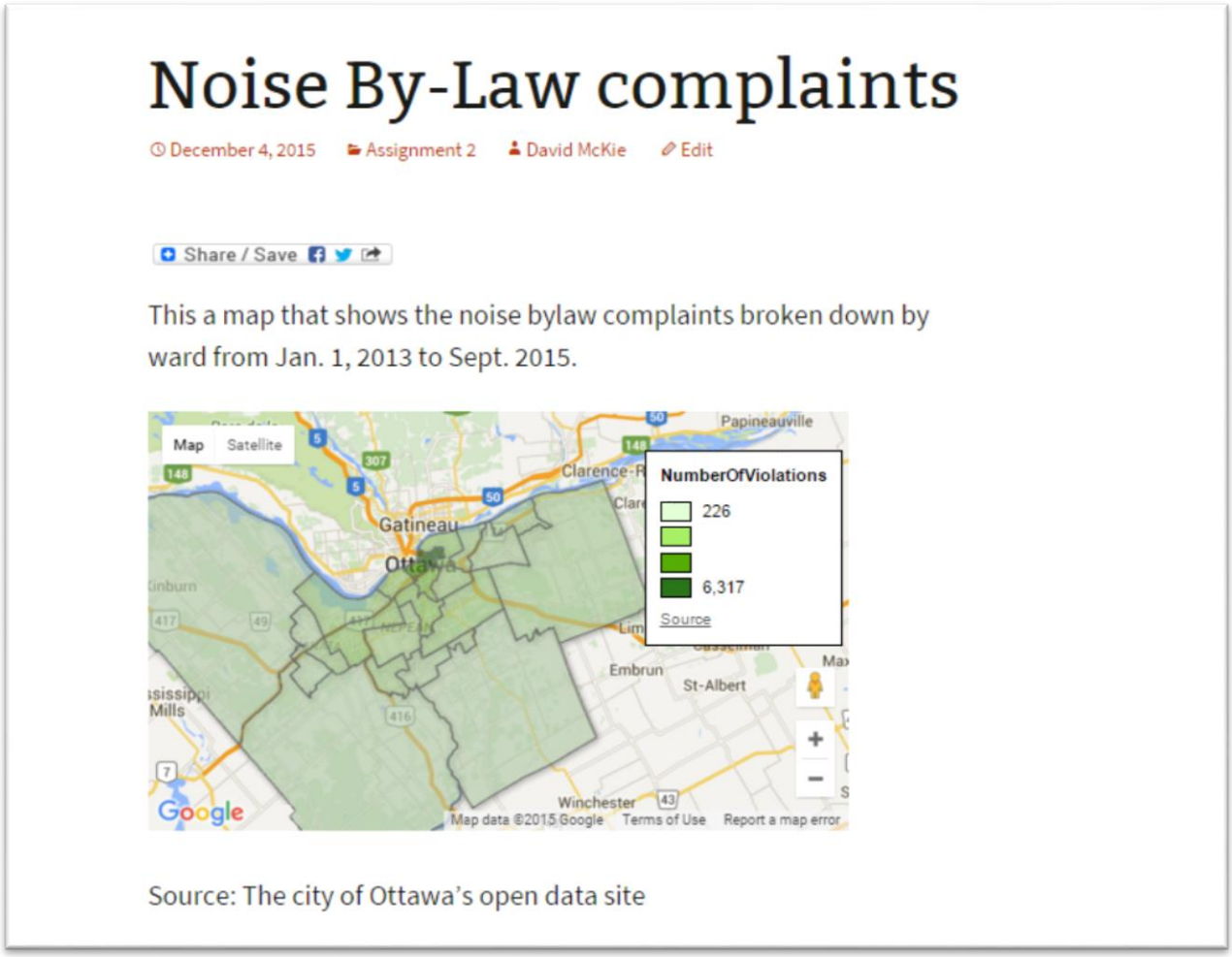




54. In addition to the url, we also have the embed code. You can change the width and height from the default values, before coping the link, which you can embed into the html view of your blog post.

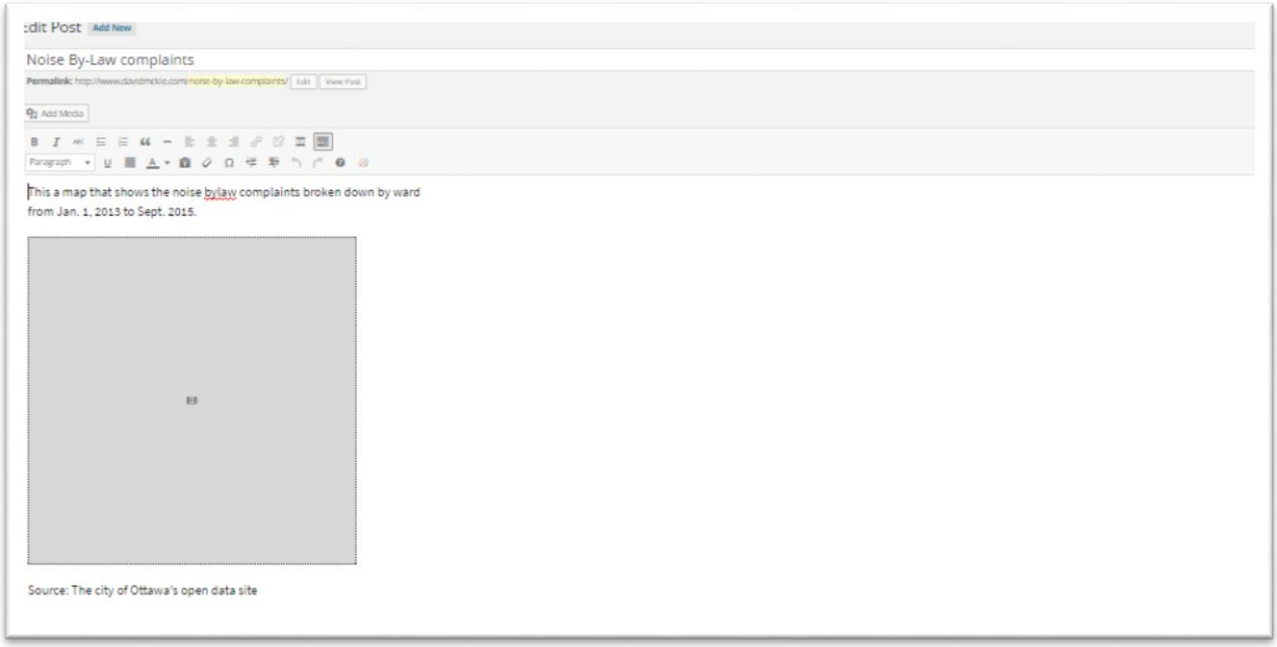


55. We've already given it a title. However, in the space above the embed link, we can type some text to explain what we're seeing. And at the bottom of the embed link, site the source. Once you're typed the information in the "Text" view of your blog post, preview the result.

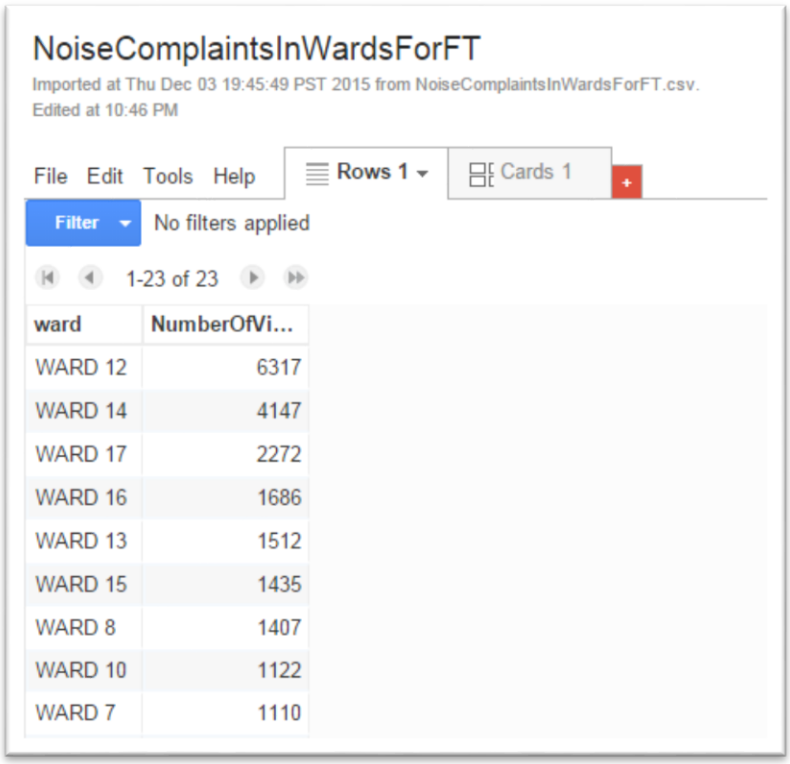


56. If you want to keep adding text, click on "Edit" to return to the WordPress site, and click the "Visual" tab, where you won't see the visualization, but

will be able to write more easily and add hyperlinks.

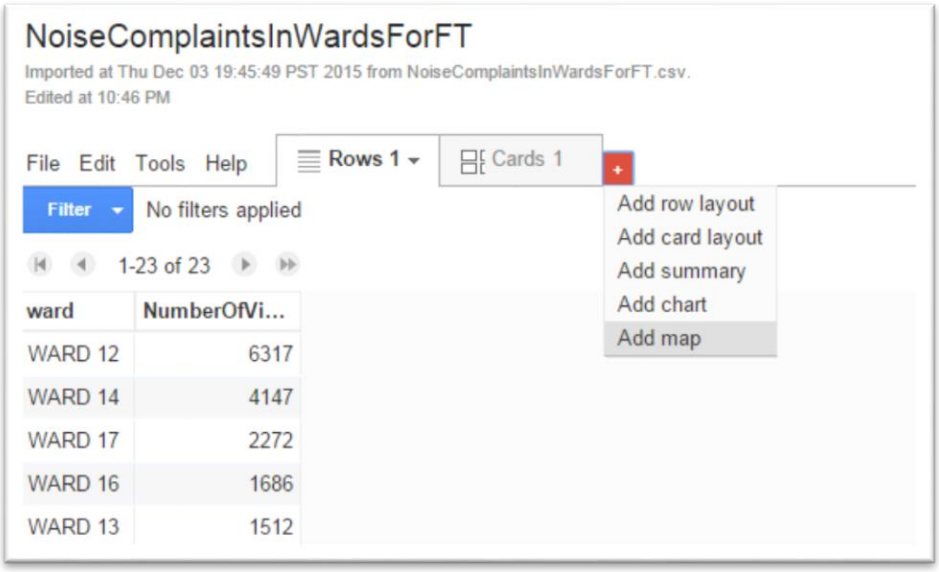


57. You have successfully completed the mapping exercise.
58. If you don't geographic information and just want to display your results as a graphic, you can follow the same process to upload the csv file.

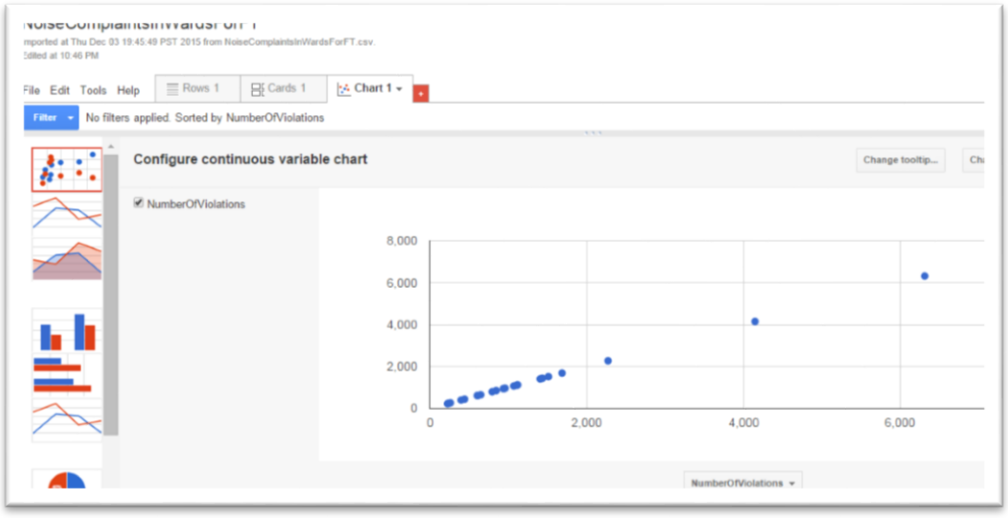


ward	NumberOfVi...
WARD 12	6317
WARD 14	4147
WARD 17	2272
WARD 16	1686
WARD 13	1512
WARD 15	1435
WARD 8	1407
WARD 10	1122
WARD 7	1110

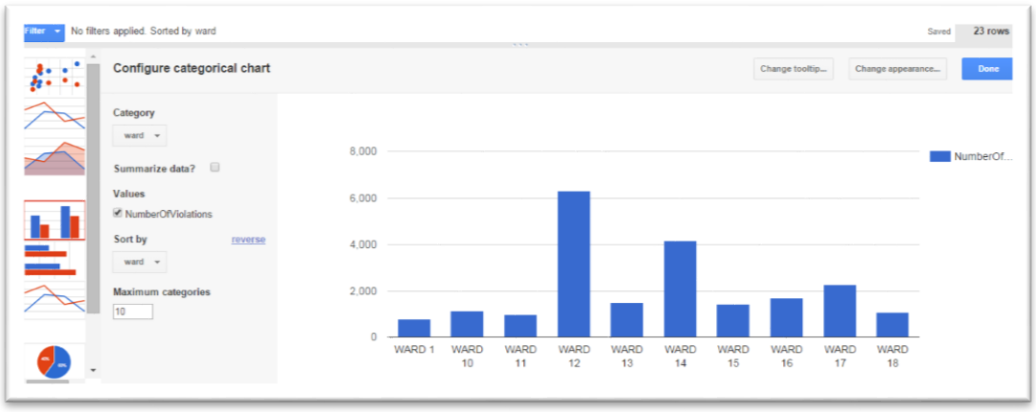
59. You'll recall that when we upload files without geographic information, we don't get a geometry tab.
60. To obtain a option for a graph, click on the plus sign next to the "Cards1" tab.



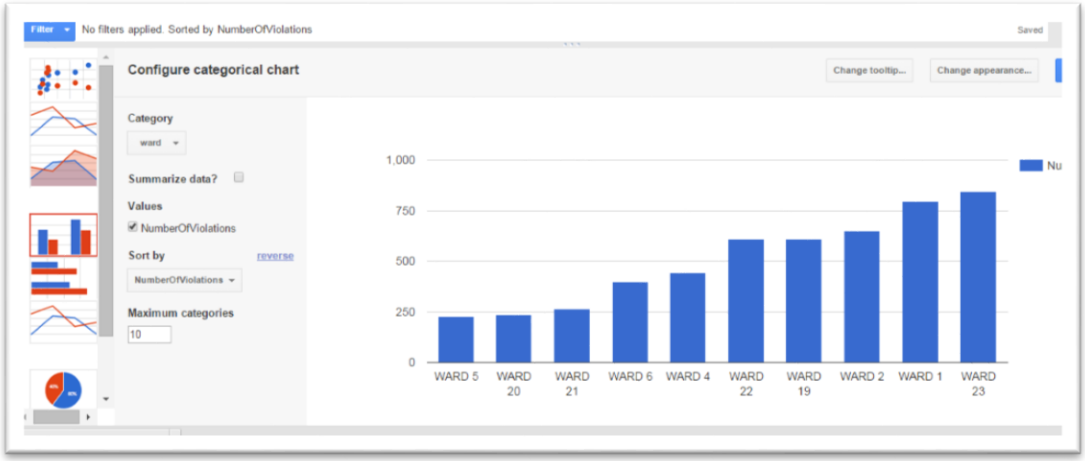
61. Select "Add chart".



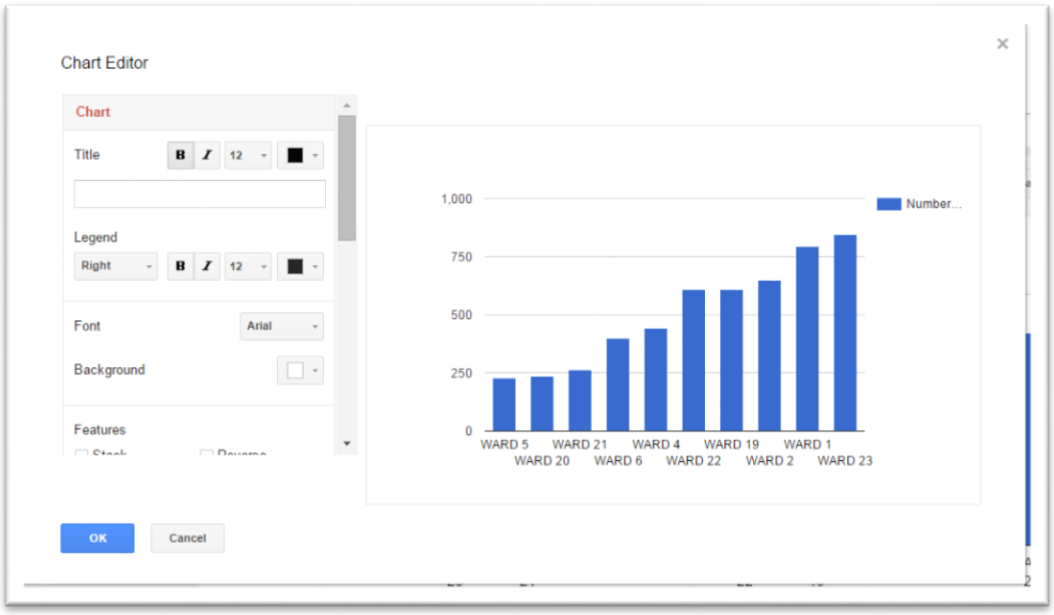
62. Your options are on the left. Let's choose a simple bar chart.



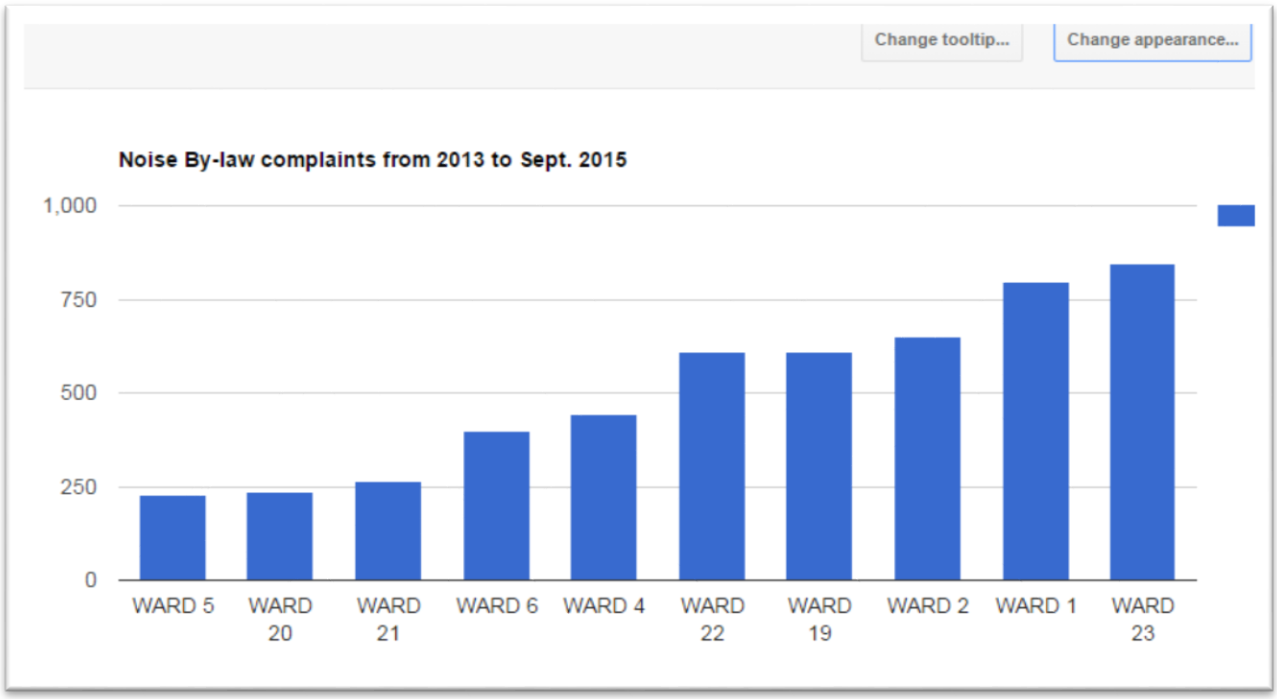
63. To obtain a more accurate result, we want to sort by the number of violations. So make sure that column is selected under the "Sort by" subheading to the left.



64. Pretty good. Now we have to give the chart a name. To do this, click on the "Change appearance" tab on the top right.

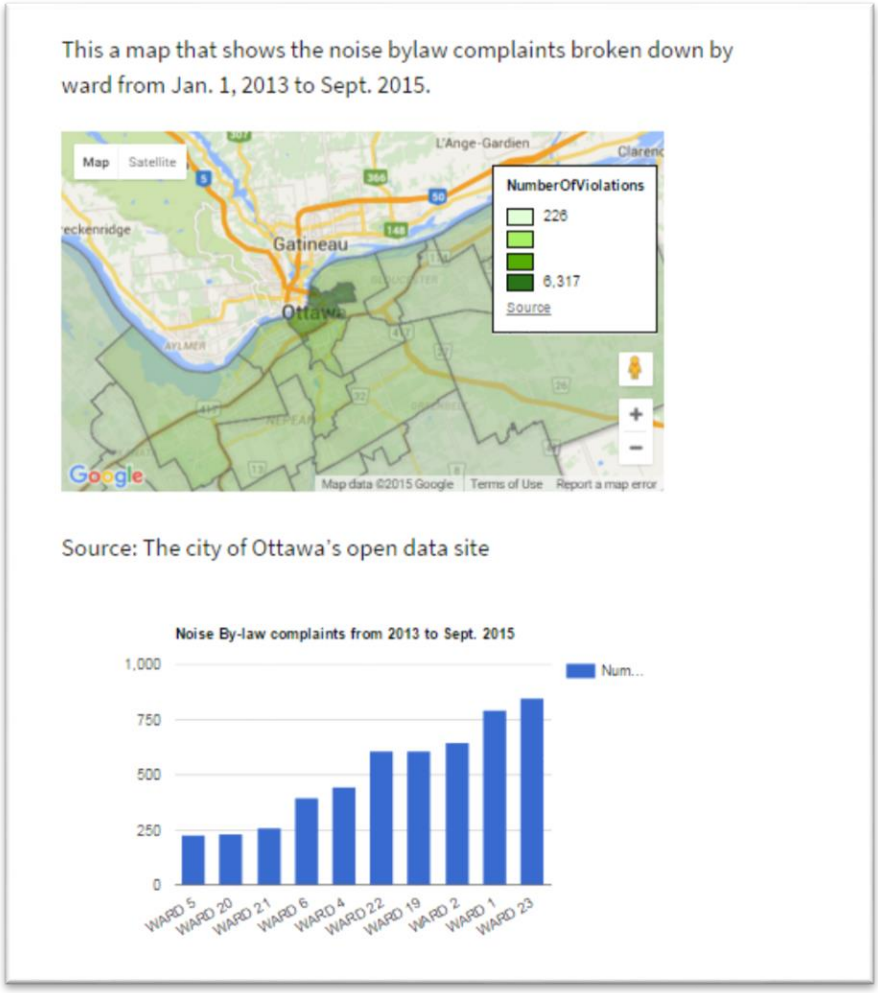


65. You can also experiment with different fonts and sizes.



66. If you're happy with the result, select the "Done" tab.

67. To get the embed code, we can go through the same steps to Share, and then “Publish the results to obtain the embed code, which we can add to our blog post.



68. We also need more text to set up the chart, and the map, for that matter. But this should give you a general idea how we can use Fusion Tables to visualize maps and charts.